GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: April 23, 2004, 16:21:29 ; Search time 57 Seconds
(without alignments)
738.589 Million cell updates/sec

Title: US-09-931-325C-170_COPY_1_149
Perfect score: 793
Sequence: 1 MDIDPYKEFGATVELLSFLP.....PAYRPPNAPILSTLPETTVV 149

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1586107 seqs, 282547505 residues

Total number of hits satisfying chosen parameters: 1586107

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :
A_Geneseq_29Jan04:*
1: geneseqp1980s:*
2: geneseqp1990s:*
3: geneseqp2000s:*
4: geneseqp2001s:*
5: geneseqp2002s:*
6: geneseqp2003as:*
7: geneseqp2003bs:*
8: geneseqp2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	793	100.0	171	5	AAU93972	Aau93972 Immunogen
2	793	100.0	183	2	AAY29674	Aay29674 Human hep
3	793	100.0	183	5	AAU87796	Aau87796 Human hep
4	793	100.0	183	5	AAU80906	Aau80906 Hepatitis
5	793	100.0	183	5	ABG94182	Abg94182 Hepatitis
6	793	100.0	183	5	AAU93961	Aau93961 Hepatitis
7	793	100.0	183	5	ABG80494	Abg80494 Hepatitis
8	793	100.0	183	6	ABO01919	Abo01919 Hepatitis
9	793	100.0	183	6	ABR56468	Abr56468 Hepatitis
10	793	100.0	183	6	ABR44571	Abr44571 Hepatitis
11	793	100.0	183	7	ADD24146	Add24146 Hepatitis
12	793	100.0	183	7	ADE10767	Ade10767 Human Hep
13	793	100.0	194	2	AAW50242	Aaw50242 Hepatitis
14	793	100.0	212	2	AAW50250	Aaw50250 Hepatitis
15	793	100.0	212	5	AAU80921	Aau80921 Hepatitis
16	793	100.0	212	5	ABG94197	Abg94197 Hepatitis
17	793	100.0	212	5	AAE17018	Aae17018 Hepatitis
18	793	100.0	212	5	AAE19898	Aae19898 Hepatitis
19	793	100.0	212	5	AAE19793	Aae19793 Hepatitis
20	793	100.0	212	5	ABG80509	Abg80509 Hepatitis
21	793	100.0	212	6	ABR56483	Abr56483 Hepatitis
22	793	100.0	212	6	ABR44586	Abr44586 Hepatitis
23	793	100.0	212	7	ABW00349	Abw00349 Hepatitis
24	793	100.0	212	7	ADD24161	Add24161 Hepatitis
25	793	100.0	289	2	AAW09049	Aaw09049 Plasmid p
26	793	100.0	346	2	AAR27473	Aar27473 S12/core
27	793	100.0	397	2	AAW09048	Aaw09048 Plasmid p
28	791	99.7	183	5	AAU80909	Aau80909 Hepatitis
29	791	99.7	183	5	ABG94185	Abg94185 Hepatitis
30	791	99.7	183	5	ABG80497	Abg80497 Hepatitis
31	791	99.7	183	6	ABR56471	Abr56471 Synthetic
32	791	99.7	183	6	ABR44574	Abr44574 Synthetic
33	791	99.7	183	7	ADD24149	Add24149 Hepatitis
34	790	99.6	183	5	AAU80911	Aau80911 Hepatitis
35	790	99.6	183	5	AAU80912	Aau80912 Hepatitis
36	790	99.6	183	5	ABG94187	Abg94187 Hepatitis
37	790	99.6	183	5	ABG94188	Abg94188 Hepatitis
38	790	99.6	183	5	ABG80500	Abg80500 Hepatitis
39	790	99.6	183	5	ABG80499	Abg80499 Hepatitis
40	790	99.6	183	6	ABR56473	Abr56473 Hepatitis
41	790	99.6	183	6	ABR56474	Abr56474 Hepatitis
42	790	99.6	183	6	ABR44576	Abr44576 Hepatitis
43	790	99.6	183	6	ABR44577	Abr44577 Hepatitis
44	790	99.6	183	7	ADD24151	Add24151 Hepatitis
45	790	99.6	183	7	ADD24152	Add24152 Hepatitis

ALIGNMENTS

RESULT 1
AAU93972
ID AAU93972 standard; peptide; 171 AA.
XX
AC AAU93972;
XX
DT 02-JUL-2002 (first entry)
XX
DE Immunogenic HBc chimeric particle #9.
XX
KW Immunogenic; hepadnavirus nucleocapsid protein; hepatitis B core; HBc;
KW vaccine; B cell epitope; T cell epitope; immunostimulant.
XX
OS Plasmodium falciparum.
XX
PN WO200214478-A2.
XX
PD 21-FEB-2002.
XX
PF 16-AUG-2001; 2001WO-US041759.
XX
PR 16-AUG-2000; 2000US-0225843P.
PR 22-AUG-2000; 2000US-0226867P.
PR 15-AUG-2001; 2001US-00930915.
XX
PA (APOV-) APOVIA INC.
XX
PI Birkett AJ;
XX
DR WPI; 2002-257601/30.
XX
PT Novel recombinant hepadnavirus nucleocapsid protein, termed as chimeric
PT hepatitis B core protein, displays immunogenic epitopes at N-terminus,
PT HBc immunogenic loop with linker for conjugated epitope and C-terminus.
XX
PS Example 4; Page 273; 289pp; English.
XX
CC The invention relates to a recombinant hepadnavirus nucleccapsid protein,
CC i.e. a chimeric hepatitis B core (HBc) protein (I), displaying one or
CC more immunogenic epitopes at the N-terminus, HBc immunogenic loop (L) or
CC C-terminus, or having a heterologous linker for a conjugated epitope in
CC (L), and containing a Cys residue at, or near, the C-terminus that
CC confers enhanced stability to the particles. A vaccine comprising (I) is
CC useful for inducing an immune response in an inoculated host animal, by
CC inoculating a host animal with the vaccine, and maintaining that
CC inoculated animal for a time period sufficient for that animal to develop
CC an immune response. The immunogenic particles formed using (I) are
CC substantially free of binding to nucleic acids, and are most stable than

CC the particle formed from otherwise identical HBc chimer that lacks the C-
CC terminal residue or in which a C-terminal Cys is replaced by another
CC residue. The chimer particles are most stable on storage in aqueous
CC compositions that are particles of similar sequence that lack any C-
CC terminal Cys residues. The chimer molecule exhibits the self-assembly not
CC exhibiting the nucleic acid binding of those native particles, and
CC excellent B cell and T cell immunogenicities. The chimer particles are
CC typically prepared in higher yield than similar particles that are free
CC of a C-terminal Cys. The particles are often far more immunogenic than
CC the similar conjugates that lack a C-terminal Cys. Immunogenicities of
CC particles assembled from the chimer molecules are enhanced as compared to
CC similar particles assembled from chimer molecules lacking at least one C-
CC terminal Cys. AAU93802-AAU93997 represent immunogenic HBc particles amino
CC acid sequences and related sequences of the invention
XX
SQ Sequence 171 AA;

Query Match 100.0%; Score 793; DB 5; Length 171;
Best Local Similarity 100.0%; Pred. No. 8.8e-85;
Matches 149; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
```

RESULT 2
AAY29674
ID AAY29674 standard; protein; 183 AA.
XX
AC AAY29674;
XX
DT 08-NOV-1999 (first entry)
XX
DE Human hepatitis B core protein.
XX
KW Human hepatitis B core protein; HBc; modified; immunodominant;
KW nucleocapsid protein; vaccine; T cell epitope.
XX
OS Hepatitis B virus.
XX
PN WO9940934-A1.
XX
PD 19-AUG-1999.
XX
PF 11-FEB-1999; 99WO-US003055.
XX
PR 12-FEB-1998; 98US-0074537P.
XX
PA (IMMU-) IMMUNE COMPLEX CORP.
XX
PI Birkett AJ;
XX
DR WPI; 1999-527340/44.
DR N-PSDB; AAZ08816.
XX
PT Conjugate of hepatitis B core protein, modified to increase reactivity
PT with hapten, used to raise antibodies against the hapten, e.g. in
PT vaccines.
XX
PS Claim 17; Page 77-78; 128pp; English.
XX
CC The present invention describes a conjugate (A) comprising a
CC strategically modified hepatitis B core (HBc) protein (I) attached to a
CC hapten, where (I) includes amino acids (aa) 10-140 of the wild type HBc
CC 183 aa sequence (given in AAY29674) and additionally has an insert (II)
CC in the region corresponding to aa's 50-100, where the insert is of 1 to
CC about 40 aa's and contains a chemically reactive aa residue linked to the
CC hapten. A vaccine containing (A), optionally in the form of particles, is
CC used to induce a protective antibody response against the pathogen from
CC which the hapten is derived, in humans or other animals. These pathogens
CC may be bacteria, viruses, rickettsia or protozoa. Insertion of (II)
CC overcomes the low reactivity of aa side chains in native HBc protein,
CC increasing the reactivity with hapten and resulting in conjugates of
CC improved immunogenicity. Modified HBc can be derivatised in the form of
CC particles by well-defined chemical methods, and is unlikely to cause
CC immunological side-effects. The present sequence represents the wild type
CC HBc protein
XX
SQ Sequence 183 AA;

Query Match 100.0%; Score 793; DB 2; Length 183;
Best Local Similarity 100.0%; Pred. No. 9.7e-85;
Matches 149; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
```

RESULT 3
AAU87796
ID AAU87796 standard; protein; 183 AA.
XX
AC AAU87796;
XX
DT 21-MAY-2002 (first entry)
XX
DE Human hepatitis B virus nucleocapsid protein #1.
XX
KW Hepatitis B virus; nucleocapsid protein; HBc; hepatitis B virus core;
KW B cell epitope; T cell epitope; malaria; HIV-1; Plasmodium; protozoacide;
KW circumsporozoite; human immunodeficiency virus type I; human; squirrel;
KW woodchuck.
XX
OS Homo sapiens.
XX
PN WO200213765-A2.
XX
PD 21-FEB-2002.
XX
PF 16-AUG-2001; 2001WO-US025625.
XX
PR 16-AUG-2000; 2000US-0225813P.
PR 15-AUG-2001; 2001US-00931325.
XX
PA (APOV-) APOVIA INC.
XX
PI Birkett AJ;
XX
DR WPI; 2002-241832/29.
DR N-PSDB; ABK44278.
XX
PT Recombinant hepatitis B virus core protein chimer molecule, useful to
PT induce antibodies to malarial parasites, comprises malaria-specific T-
PT cell epitope and is engineered for enhanced stability.
XX
PS Disclosure; Fig 6; 197pp; English.
XX
CC The invention relates to a recombinant hepatitis B virus core (HBc)

CC protein chimer molecule that contains 4 peptide-linked amino acid residue
CC sequence domains. The molecule of the invention contains a region
CC constituting a B cell epitope of the circumsporozoite protein of a
CC species of the parasite, Plasmodium. The chimer sequence is useful as an
CC immunogen for inducing antibodies to the malaria-causing parasite,
CC Plasmodium, particularly P. falciparum and P. vivax. Sequences AAU87695-
CC AAU87804 represent peptide epitopes of the invention
XX
SQ Sequence 183 AA;

Query Match 100.0%; Score 793; DB 5; Length 183;
Best Local Similarity 100.0%; Pred. No. 9.7e-85;
Matches 149; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
```

RESULT 4
AAU80906
ID AAU80906 standard; protein; 183 AA.
XX
AC AAU80906;
XX
DT 09-APR-2002 (first entry)
XX
DE Hepatitis B virus core antigen variant (HBcAg) #11.
XX
KW Vaccine; molecular scaffold; pilus; pilin; HBcAg; antigen;
KW hepatitis B virus capsid protein; JUN; FOS; HIV gp140;
KW measles virus N protein; bee venom phospholipase; Th type 2 T-helper;
KW Th2; Sinbis virus E2 protein; amyloid beta; influenza M2 antigen;
KW human immunodeficiency virus infection; viral hepatitis; measles;
KW chicken pox; pneumonia; tuberculosis; syphilis; malaria; allergy; cancer;
KW chronic disease; arthritis; colitis; diabetes; multiple sclerosis.
XX
OS Hepatitis B virus.
XX
PN WO200185208-A2.
XX
PD 15-NOV-2001.
XX
PF 02-MAY-2001; 2001WO-IB000741.
XX
PR 05-MAY-2000; 2000US-0202341P.
XX
PA (CYTO-) CYTOS BIOTECHNOLOGY AG.
PA (SEBB/) SEBBEL P.
PA (DUNA/) DUNANT N.
PA (BACH/) BACHMANN M.
PA (TISS/) TISSOT A.
PA (LECH/) LECHENER F.
XX
PI Sebbel P, Dunant N, Bachmann M, Tissot A, Lechener F;
XX
DR WPI; 2002-055561/07.
XX
PT New composition, useful for vaccine production, comprises antigen or
PT antigenic determinant and non-natural molecular scaffold comprising
PT organizer and core particle such as bacterial pilus or pilin protein.
XX
PS Claim 34; Page 216-217; 287pp; English.
XX
CC The invention relates to a composition comprising: (a) a non-natural
CC molecular scaffold (molecular scaffold) which comprises a core particle
CC such as a bacterial pilus or pilin protein, a recombinant form of the
CC protein, a virus-like particle or a hepatitis B virus capsid protein
CC (HBcAg), and an organiser; and (b) an antigen or antigenic determinant,
CC where the molecular scaffold and antigenic determinant interact to form
CC an ordered and repetitive antigen array. Suitable antigenic determinants
CC include JUN, FOS, HIV gp140, measles virus N protein, bee venom
CC phospholipase, Sinbis virus E2 protein, amyloid beta derived peptides and
CC influenza M2 antigen. The composition (or vaccine) is useful for
CC immunisation, by administration to a subject, where the administration
CC produces an immune response, such as humoral, cellular or protective
CC immune response, preferably a Th type 2 T-helper (Th2) response that is
CC specific for the antigenic determinant. The administration induces
CC antibodies specific for the antigenic determinant of a subtype
CC corresponding to the Th2 subtype in the subject. The subject does not
CC generate a Th2 subtype that is specific for pilus or pilin polypeptide or
CC antigenic determinant. The composition is useful for the production of
CC vaccines for prevention of infectious diseases such as human
CC immunodeficiency virus, viral hepatitis, measles, chicken pox, pneumonia,
CC tuberculosis, syphilis, malaria, and for treating allergy, cancer, and
CC chronic diseases induced or accelerated by a Th1 type immune response,
CC such as arthritis, colitis, diabetes and multiple sclerosis. The
CC composition is useful to generate defined self-specific antibodies and
CC specific immune responses of the Th2 type and allows the creation of
CC highly efficient vaccines against infectious diseases, and for treating
CC allergy, cancer, and chronic diseases induced or accelerated by a Th1
CC type immune response. The present sequence is a peptide or protein
CC incorporated into the compositions of the invention
XX
SQ Sequence 183 AA;

Query Match 100.0%; Score 793; DB 5; Length 183;
Best Local Similarity 100.0%; Pred. No. 9.7e-85;
Matches 149; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
```

RESULT 5
ABG94182
ID ABG94182 standard; protein; 183 AA.
XX
AC ABG94182;
XX
DT 10-DEC-2002 (first entry)
XX
DE Hepatitis B capsid (core) protein antigen (HBcAg) variant #11.
XX
KW Human; mouse; rat; antimicrobial; antiallergic; immunomodulatory;
KW cytostatic; antiviral; antidiabetic; hypoglycaemic; antigen array;
KW vaccine; infectious disease.
XX
OS Hepatitis B virus.
XX
PN WO200256905-A2.
XX
PD 25-JUL-2002.
XX
PF 21-JAN-2002; 2002WO-IB000166.
XX
PR 19-JAN-2001; 2001US-0262379P.
PR 04-MAY-2001; 2001US-0288549P.
PR 05-OCT-2001; 2001US-0326998P.

PR 07-NOV-2001; 2001US-0331045P.
XX
PA (CYTO-) CYTOS BIOTECHNOLOGY AG.
XX
PI Renner WA, Bachmann M, Tissot A, Maurer P, Lechner F, Sebbel P;
PI Piossek C;
XX
DR WPI; 2002-627351/67.
XX
PT Molecular antigen array used in the production of vaccines for infectious
PT diseases.
XX
PS Claim 112; Page 337-338; 441pp; English.
XX
CC This invention relates to a novel ordered and repetitive antigen array
CC used in the production of vaccines for infectious diseases. The invention
CC also discloses a composition comprising a non-natural molecular scaffold
CC comprising a core particle selected from a core particle of a non-natural
CC origin and a core particle of natural origin and an organiser comprising
CC at least one first attachment site, where the organiser is connected to
CC the core particle by at least one covalent bond. Also disclosed is an
CC antigen or antigenic determinant with at least one second attachment
CC site, where the antigen or antigenic determinant is amyloid beta peptide
CC (Abeta1-42) or its fragment and where the second attachment site is
CC selected from an attachment site not naturally occurring with the antigen
CC or antigenic determinant and an attachment site naturally occurring with
CC the antigen or antigenic determinant, where the second attachment site is
CC capable of association through at least one non-peptide bond to the first
CC attachment site and where the antigen or antigenic determinant and the
CC scaffold interact through the association to form an ordered and
CC repetitive antigen array. The invention also comprises a coat protein
CC capable of forming a capsid which comprises mutant Qbeta coat proteins
CC having an amino acid sequence selected from five amino acid sequences
CC fully defined in the specification. The compounds of the invention may
CC have antimicrobial, antiallergic, immunomodulatory, cytostatic,
CC antiviral, antidiabetic, or hypoglycaemic activities and may be used in
CC immunisation and as a vaccine. The present sequence represents a protein
CC sequence used to create the compositions of the invention
XX
SQ Sequence 183 AA;

Query Match 100.0%; Score 793; DB 5; Length 183;
Best Local Similarity 100.0%; Pred. No. 9.7e-85;
Matches 149; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
```

RESULT 6
AAU93961
ID AAU93961 standard; peptide; 183 AA.
XX
AC AAU93961;
XX
DT 02-JUL-2002 (first entry)
XX
DE Hepatitis B virus HBc eptiope #1.
XX
KW Immunogenic; hepadnavirus nucleocapsid protein; hepatitis B core; HBc;
KW vaccine; B cell epitope; T cell epitope; immunostimulant.
XX
OS Hepatitis B virus.
XX

PN WO200214478-A2.
XX
PD 21-FEB-2002.
XX
PF 16-AUG-2001; 2001WO-US041759.
XX
PR 16-AUG-2000; 2000US-0225843P.
PR 22-AUG-2000; 2000US-0226867P.
PR 15-AUG-2001; 2001US-00930915.
XX
PA (APOV-) APOVIA INC.
XX
PI Birkett AJ;
XX
DR WPI; 2002-257601/30.
XX
PT Novel recombinant hepadnavirus nucleocapsid protein, termed as chimeric
PT hepatitis B core protein, displays immunogenic epitopes at N-terminus,
PT HBc immunogenic loop with linker for conjugated epitope and C-terminus.
XX
PS Disclosure; Fig 7; 289pp; English.
XX
CC The invention relates to a recombinant hepadnavirus nucleocapsid protein,
CC i.e. a chimeric hepatitis B core (HBc) protein (I), displaying one or
CC more immunogenic epitopes at the N-terminus, HBc immunogenic loop (L) or
CC C-terminus, or having a heterologous linker for a conjugated epitope in
CC (L), and containing a Cys residue at, or near, the C-terminus that
CC confers enhanced stability to the particles. A vaccine comprising (I) is
CC useful for inducing an immune response in an inoculated host animal, by
CC inoculating a host animal with the vaccine, and maintaining that
CC inoculated animal for a time period sufficient for that animal to develop
CC an immune response. The immunogenic particles formed using (I) are
CC substantially free of binding to nucleic acids, and are most stable than
CC the particle formed from otherwise identical HBc chimer that lacks the C-
CC terminal residue or in which a C-terminal Cys is replaced by another
CC residue. The chimer particles are most stable on storage in aqueous
CC compositions that are particles of similar sequence that lack any C-
CC terminal Cys residues. The chimer molecule exhibits the self-assembly not
CC exhibiting the nucleic acid binding of those native particles, and
CC excellent B cell and T cell immunogenicities. The chimer particles are
CC typically prepared in higher yield than similar particles that are free
CC of a C-terminal Cys. The particles are often far more immunogenic than
CC the similar conjugates that lack a C-terminal Cys. Immunogenicities of
CC particles assembled from the chimer molecules are enhanced as compared to
CC similar particles assembled from chimer molecules lacking at least one C-
CC terminal Cys. AAU93802-AAU93997 represent immunogenic HBc particles amino
CC acid sequences and related sequences of the invention
XX
SQ Sequence 183 AA;

Query Match 100.0%; Score 793; DB 5; Length 183;
Best Local Similarity 100.0%; Pred. No. 9.7e-85;
Matches 149; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
```

RESULT 7
ABG80494
ID ABG80494 standard; protein; 183 AA.
XX
AC ABG80494;
XX

DT 29-NOV-2002 (first entry)
XX
DE Hepatitis B virus core capsid protein, HBcAg, variant #11.
XX
KW Molecular antigen array; vaccine; antigen; antimicrobial;
KW molecular scaffold; amyloid beta; Abeta 1-42; influenza;
KW graft versus host disease; IgE-mediated allergic reaction; anaphylaxis;
KW adult respiratory distress syndrome; ARDS; Crohn's disease;
KW allergic asthma; acute lymphoblastic leukaemia; non-Hodgkin's lymphoma;
KW Grave's disease; systemic lupus erythematosus; osteoporosis;
KW inflammatory immune disease; myasthenia gravis; multiple sclerosis;
KW immunoproliferative disease lymphadenopathy; Alzheimer's disease;
KW angioimmunoproliferative lymphadenopathy; immunoblastive lymphadenopathy;
KW rheumatoid arthritis; diabetes; infectious disease; factor Xa;
KW enterokinase; cysteine-containing linker.
XX
OS Hepatitis B virus.
XX
PN WO200256907-A2.
XX
PD 25-JUL-2002.
XX
PF 21-JAN-2002; 2002WO-IB000168.
XX
PR 19-JAN-2001; 2001US-0262379P.
PR 04-MAY-2001; 2001US-0288549P.
PR 05-OCT-2001; 2001US-0326998P.
PR 07-NOV-2001; 2001US-0331045P.
XX
PA (CYTO-) CYTOS BIOTECHNOLOGY AG.
PA (NOVS) NOVARTIS PHARMA AG.
PA (MAUR/) MAURER P.
PA (LECH/) LECHNER F.
PA (ORTM/) ORTMANN R.
PA (LUEO/) LUEOEND R.
PA (STAU/) STAUFENBIEL M.
PA (FREY/) FREY P.
XX
PI Maurer P, Lechner F, Ortmann R, Lueoend R, Staufenbiel M, Frey P;
PI Renner WA, Bachmann M, Tissot A, Sebbel P, Piossek C;
XX
DR WPI; 2002-636514/68.
XX
PT Molecular antigen array used in the production of vaccines for infectious
PT diseases.
XX
PS Claim 14; Page 314-315; 418pp; English.
XX
CC The invention relates to a composition comprising: (a) a non-natural
CC molecular scaffold comprising: (i) a core particle selected from: (1) a
CC core particle of a non-natural origin; and (2) a core particle of natural
CC origin; and (ii) an organiser comprising at least one first attachment
CC site, where the organiser is connected to the core particle by at least
CC one covalent bond; (b) an antigen or antigenic determinant with at least
CC one second attachment site, where the antigen or antigenic determinant is
CC amyloid beta peptide (Abeta 1-42) or its fragment, and where the second
CC attachment site is selected from: (i) an attachment site not naturally
CC occurring with the antigen or antigenic determinant; and (ii) an
CC attachment site naturally occurring with the antigen or antigenic
CC determinant, where the second attachment site is capable of association
CC through at least one non-peptide bond to the first attachment site; and
CC where the antigen or antigenic determinant and the scaffold interact
CC through the association to form an ordered and repetitive antigen array.
CC Also included is a process for producing a non-naturally occurring
CC ordered and repetitive antigen array. The composition is used in
CC immunisation and as a vaccine for diseases such as influenza, graft
CC versus host disease, IgE-mediated allergic reactions, anaphylaxis, adult
CC respiratory distress syndrome (ARDS), Crohn's disease, allergic asthma,
CC acute lymphoblastic leukaemia, non-Hodgkin's lymphoma, Grave's disease,
CC systemic lupus erythematosus, inflammatory immune diseases, myasthenia
CC gravis, immunoproliferative disease lymphadenopathy,
CC angioimmunoproliferative lymphadenopathy, immunoblastive lymphadenopathy,
CC rheumatoid arthritis, diabetes, multiple sclerosis, Alzheimer's disease,
CC osteoporosis and infectious diseases. The present sequence is an antigen
CC for use in the array of the invention. The antigen is modified to posses
CC a cleavage site (enterokinase or factor Xa) and a Cysteine- containing N-
CC or C-terminal linker peptide which serves as the attachment point to a
CC virus like particle or bacterial protein (the scaffold protein)
XX
SQ Sequence 183 AA;

Query Match 100.0%; Score 793; DB 5; Length 183;
Best Local Similarity 100.0%; Pred. No. 9.7e-85;
Matches 149; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
```

RESULT 8
ABO01919
ID ABO01919 standard; protein; 183 AA.
XX
AC ABO01919;
XX
DT 07-AUG-2003 (first entry)
XX
DE Hepatitis B virus core protein antigen.
XX
KW Cholesteryl ester transfer protein; CETP; HDL cholesterol;
KW high density lipoprotein; immunogen; pro-atherogenic dyslipoproteinaemia;
KW low density lipoprotein; LDL; HBcAg; hepatitis core antigen.
XX
OS Hepatitis B virus.
XX
PN US2003021804-A1.
XX
PD 30-JAN-2003.
XX
PF 21-JAN-1997; 97US-00785997.
XX
PR 21-JAN-1997; 97US-00785997.
XX
PA (NEED/) NEEDLEMAN P.
PA (GLEN/) GLENN K.
XX
PI Needleman P, Glenn K;
XX
DR WPI; 2003-456282/43.
DR N-PSDB; ACD07806.
XX
PT Increasing high density lipoprotein cholesterol level in blood of a
PT mammal whose blood contains cholesteryl ester transfer protein, by
PT immunizing mammal with inoculum of cholesteryl ester transfer protein
PT immunogen.
XX
PS Disclosure; Page 30; 35pp; English.
XX
CC The invention relates to increasing high density lipoprotein (HDL)
CC cholesterol in the blood of a mammal whose blood contains cholesteryl
CC ester transfer protein (CETP), comprising immunising mammal with an
CC inoculum having CETP immunogen that is an immunogenic polypeptide (IP)
CC having CETP amino acid residue sequence, allowing IP to induce production
CC of anti-CETP antibodies in mammal and lessen transfer of cholesteryl
CC esters from HDL. Also included is a CETP immunogen that comprises an
CC immunogenic polypeptide having a CETP amino acid residue sequence
CC covalently bonded to an exogenous antigenic carrier (e.g. hepatitis B

CC core protein antigen, HBcAg). The method is useful for increasing the
CC concentration of HDL cholesterol in the blood of a mammal whose blood
CC contains CETP. The method is useful for ameliorating or treating pro-
CC atherogenic dyslipoproteinaemias characterised by low HDL/low density
CC lipoprotein (LDL) cholesterol ratios. The method has an effect that lasts
CC for months as compared to the short-term effects of the small molecule
CC drugs non available. The method utilises the host mammal's own
CC (autogenic) immunological system to provide a desired result, thus
CC obviating problems associated with repeated administration of xenogeneic
CC antibodies that themselves become immunogenic in the host mammal. The
CC method utilises accepted exogenous antigenic carriers such as hepatitis B
CC core protein (HBcAg), tetanus toxoid, tuberculin purified protein
CC derivative (PPD) and diphtheria toxoid which can boost the host mammal's
CC immunity to those pathogens. The method also lessens the cholesteryl
CC ester transfer from HDL to LDL or very low density lipoprotein, thus
CC increasing the concentration of anti-atherogenic HDL cholesterol. The
CC present sequence represents the hepatitis B core protein (HBcAg) used as
CC the exogenous antigenic carrier
XX
SQ Sequence 183 AA;

Query Match 100.0%; Score 793; DB 6; Length 183;
Best Local Similarity 100.0%; Pred. No. 9.7e-85;
Matches 149; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
```

RESULT 9
ABR56468
ID ABR56468 standard; protein; 183 AA.
XX
AC ABR56468;
XX
DT 28-JUL-2003 (first entry)
XX
DE Hepatitis B core antigen precursor variant protein SEQ ID NO:39.
XX
KW Antigen presenting cell; APC; immune response; virus like particle; VLP;
KW cytostatic; virucide; antibacterial; antiparasitic; fungicide;
KW antiallergic; immunosuppressive; antiaddictive; antiinflammatory;
KW antithyroid; antidiabetic; neuroprotective; nootropic; osteopathic;
KW antirheumatic; antiarthritic; vaccine; immunisation; infectious disease;
KW anti-viral protection; tumour; allergy; drug addiction; Crohn's disease;
KW graft-versus-host disease; Grave's disease; diabetes; multiple sclerosis;
KW Alzheimer's disease; osteoporosis; rheumatoid arthritis;
KW inflammatory autoimmune disease.
XX
OS Hepatitis B virus.
OS Synthetic.
XX
PN WO2003024480-A2.
XX
PD 27-MAR-2003.
XX
PF 16-SEP-2002; 2002WO-IB004252.
XX
PR 14-SEP-2001; 2001US-0318967P.
XX
PA (CYTO-) CYTOS BIOTECHNOLOGY AG.
XX
PI Bachmann MF, Storni T, Lechner F;
XX
DR WPI; 2003-363095/34.
XX
PT A composition, useful for enhancing an immune response against an antigen
PT or a virus-like particle, enhancing anti-viral protection in an animal,
PT or immunizing or treating tumors or infectious diseases, e.g. viral
PT infections.
XX
PS Disclosure; Page 195; 243pp; English.
XX
CC The present invention describes a composition (C) for enhancing an immune
CC response against an antigen or a virus-like particle in an animal. (C)
CC comprises a virus-like particle (VLP) bound to at least one antigen, or a
CC VLP capable of being recognised by the immune system of the animal. Also
CC described: (1) enhancing an immune response against an antigen or a VLP
CC in an animal comprising introducing (C) into the animal; (2) vaccines
CC comprising (C) together with a pharmaceutical diluent, carrier or
CC excipient; (3) immunising or treating an animal comprising administering
CC the vaccine to the animal, or priming or boosting a T cell response in
CC the animal by administering the vaccine; and (4) enhancing anti-viral
CC protection in an animal comprising introducing (C) into the animal. (C)
CC has cytostatic, virucide, antibacterial, antiparasitic, fungicide,
CC antiallergic, immunosuppressive, antiaddictive, antiinflammatory,
CC antithyroid, antidiabetic, neuroprotective, nootropic, osteopathic,
CC antirheumatic and antiarthritic activities. (C) or the vaccines can be
CC used for enhancing an immune response against an antigen or a VLP in an
CC animal, enhancing anti-viral protection in an animal, or immunising or
CC treating tumours and infectious diseases such as viral, bacterial,
CC parasitic or fungal infections. The vaccine compositions are also useful
CC for preventing or treating allergies, drug addiction, graft-versus-host
CC disease, Crohn's disease, Grave's disease, diabetes, multiple sclerosis,
CC Alzheimer's disease, osteoporosis, rheumatoid arthritis, or inflammatory
CC autoimmune disease. ACC69838 to ACC69852 and ABR56401 to ABR56509
CC represent sequences used in the exemplification of the present invention
XX
SQ Sequence 183 AA;

Query Match 100.0%; Score 793; DB 6; Length 183;
Best Local Similarity 100.0%; Pred. No. 9.7e-85;
Matches 149; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
```

RESULT 10
ABR44571
ID ABR44571 standard; protein; 183 AA.
XX
AC ABR44571;
XX
DT 25-JUL-2003 (first entry)
XX
DE Hepatitis B core antigen precursor variant protein SEQ ID NO:39.
XX
KW Immunostimulatory; virus-like particle; bacteriophage; HBV; LCMV;
KW hepatitis B virus; lymphocytic choriomeningitis virus; vaccine;
KW immunostimulant; cytostatic; antiallergic; virucide; antibacterial;
KW immune response; immunisation; allergy; tumour; breast cancer;
KW neuroblastoma; leukaemia; viral disease; influenza; hepatitis; measles;
KW chicken pox; bacterial infection; tuberculosis; pneumonia; syphilis.
XX
OS Hepatitis B virus.
OS Synthetic.
XX

PN WO2003024481-A2.
XX
PD 27-MAR-2003.
XX
PF 16-SEP-2002; 2002WO-IB004132.
XX
PR 14-SEP-2001; 2001US-0318994P.
PR 22-APR-2002; 2002US-0374145P.
XX
PA (CYTO-) CYTOS BIOTECHNOLOGY AG.
PA (MAUR/) MAURER P.
PA (TISS/) TISSOT A.
PA (SCHW/) SCHWARZ K.
PA (MEIJ/) MEIJERINK E.
PA (LIPO/) LIPOWSKY G.
PA (PUMP/) PUMPENS P.
PA (CIEL/) CIELENS I.
PA (RENH/) RENHOFA R.
XX
PI Maurer P, Tissot A, Schwarz K, Meijerink E, Lipowsky G;
PI Pumpens P, Cielens I, Renhofa R, Bachmann MF, Storni T;
XX
DR WPI; 2003-354564/33.
XX
PT New compositions comprising immunostimulatory substances packaged into
PT virus-like particles, useful as a vaccine for enhancing an immune
PT response in animals, e.g. for treating or preventing allergies, tumors or
PT viral infections.
XX
PS Disclosure; Page 274-275; 322pp; English.
XX
CC The present invention describes a composition (C) for enhancing an immune
CC response in an animal. (C) comprises a virus-like particle (VLP), and an
CC immunostimulatory substance. The immunostimulatory substance is bound to
CC the VLP. Also described: (1) enhancing an immune response in an animal by
CC introducing (C) into the animal; (2) producing (C) for enhancing an
CC immune response in an animal; (3) vaccines comprising (C) together with a
CC pharmaceutical diluent, carrier or excipient; and (4) immunising or
CC treating an animal by: (a) administering the vaccine to the animal; (b)
CC priming a T cell response in the animal by administering the vaccine; or
CC (c) boosting a T cell response in the animal by administering the
CC vaccine. (C) has immunostimulant, cytostatic, antiallergic, virucide and
CC antibacterial activities. (I) can be used in vaccines for enhancing an
CC immune response in an animal, particularly a mammal or human.
CC Specifically, (C) is useful for enhancing a B cell response, a T cell
CC response, or a cytotoxic T-lymphocyte (CTL) response. (C) or a vaccine
CC comprising (C) can also be used for immunising or treating an animal,
CC e.g. humans, sheep, horses, cattle, pigs, dogs, cats, rats, birds,
CC reptiles or fish. (C) is particularly useful in prophylactic or
CC therapeutic vaccines against allergies, tumours (e.g. breast cancers,
CC neuroblastoma, or leukaemia), viral diseases (e.g. influenza, hepatitis,
CC measles or chicken pox), or bacterial infections (e.g. tuberculosis,
CC pneumonia or syphilis). ACC69790 to ACC69815 and ABR44502 to ABR44612
CC represent sequences used in the exemplification of the present invention
XX
SQ Sequence 183 AA;

Query Match 100.0%; Score 793; DB 6; Length 183;
Best Local Similarity 100.0%; Pred. No. 9.7e-85;
Matches 149; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
```

RESULT 11
ADD24146
ID ADD24146 standard; protein; 183 AA.
XX
AC ADD24146;
XX
DT 15-JAN-2004 (first entry)
XX
DE Hepatitis B virus core antigen (HBcAg) precursor variant Seq ID39.
XX
KW vaccine composition; virus-like particle; core particle;
KW first attachment site; antigen; antigenic determinant; prion protein;
KW PrP; PrP peptide; vaccine; neuroprotective; antiinflammatory;
KW prion disease; Bovine Spongiform Encephalopathy; BSE;
KW Creutzfeldt-Jakob Disease; HBcAg; mutant; mutein.
XX
OS Hepatitis B virus.
XX
PN WO2003059386-A2.
XX
PD 24-JUL-2003.
XX
PF 17-JAN-2003; 2003WO-EP000460.
XX
PR 18-JAN-2002; 2002US-00050902.
PR 21-JAN-2002; 2002WO-IB000166.
PR 08-JUL-2002; 2002US-0393725P.
PR 18-JUL-2002; 2002US-0396590P.
XX
PA (CYTO-) CYTOS BIOTECHNOLOGY AG.
XX
PI Bachmann M, Maurer P, Pellicioli E, Renner WA;
XX
DR WPI; 2003-598483/56.
XX
PT A vaccine composition for preventing or treating prion diseases (e.g.
PT Creutzfeldt-Jakob Disease) comprises a virus-like particle (e.g. RNA-
PT phage) and at least one prion protein or peptide bound to the virus-like
PT particle.
XX
PS Disclosure; SEQ ID NO 39; 246pp; English.
XX
CC This invention relates to a novel vaccine composition comprising a virus-
CC like or a core particle with at least one first attachment site and at
CC least one antigen or antigenic determinant that is a prion protein (PrP)
CC or its dimer, or a PrP peptide, the antigen or antigenic determinant
CC being bound to the virus-like or core particle. The vaccine of the
CC invention may have neuroprotective or antiinflammatory activity. The
CC composition is useful as a medicament or in manufacturing a medicament
CC for the treatment or prevention of prion diseases. The prion diseases may
CC include Bovine Spongiform Encephalopathy (BSE) or Creutzfeldt-Jakob
CC Disease. The present sequence is the amino acid sequence of a mutant
CC hepatitis B virus core antigen (HBcAg) which may be used during the
CC creation of the vaccine composition of the invention.
XX
SQ Sequence 183 AA;

Query Match 100.0%; Score 793; DB 7; Length 183;
Best Local Similarity 100.0%; Pred. No. 9.7e-85;
Matches 149; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
```

```
RESULT 12
ADE10767
ID   ADE10767 standard; protein; 183 AA.
XX
AC   ADE10767;
XX
DT   29-JAN-2004  (first entry)
XX
DE   Human Hepatitis B virus sub-type AYW core protein.
XX
KW   hepatotropic; virucide; antiinflammatory; chronic hepatitis; vaccine;
KW   recombinant hepatitis B core chimeric protein; HBc chimeric protein;
KW   hepatitis B infection; T-cel stimulator.
XX
OS   Hepatitis B virus.
XX
PN   US2003198645-A1.
XX
PD   23-OCT-2003.
XX
PF   21-FEB-2003; 2003US-00372076.
XX
PR   21-FEB-2002; 2002US-00080299.
PR   21-FEB-2002; 2002US-00082014.
XX
PA   (PAGE/) PAGE M.
PA   (FRIE/) FRIEDE M.
XX
PI   Page M,  Friede M;
XX
DR   WPI; 2003-852775/79.
DR   N-PSDB; ADE10968.
XX
PT   Treating chronic hepatitis B infection by administering a T cell-
PT   stimulating vaccine containing immunogenic particles having recombinant
PT   carboxy-terminal truncated hepatitis B core (HBc) chimeric protein
PT   molecules.
XX
PS   Claim 18; SEQ ID NO 1; 111pp; English.
XX
CC   The invention describes a method of treating chronic hepatitis comprising
CC   administering to a patient a T cell-stimulating amount of a vaccine
CC   comprising immunogenic particles dissolved or dispersed in a diluent,
CC   where the immunogenic particles consists of recombinant hepatitis B core
CC   (HBc) chimeric protein molecules, and maintaining the patient to induce T
CC   cells activated against HBc. The methods and compositions of the present
CC   invention are useful for treating chromic hepatitis B infection. This is
CC   the amino acid sequence of a Hepatitis B core protein.
XX
SQ   Sequence 183 AA;

  Query Match             100.0%;  Score 793;  DB 7;  Length 183;
  Best Local Similarity   100.0%;  Pred. No. 9.7e-85;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 13
AAW50242
ID   AAW50242 standard; protein; 194 AA.
XX
AC   AAW50242;
XX
DT   28-SEP-1998  (first entry)
XX
DE   Hepatitis B virus precore p22 polypeptide Met-p22.
XX
KW   Viral replication; inhibitor; HBV; nucleocapsid; gene therapy;
KW   hepatocyte; liver; Met-p22.
XX
OS   Hepatitis B virus.
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Protein         2. .194
FT                   /label= p22
XX
PN   WO9809649-A1.
XX
PD   12-MAR-1998.
XX
PF   03-SEP-1997;   97WO-US015500.
XX
PR   03-SEP-1996;   96US-0025370P.
XX
PA   (GEHO ) GEN HOSPITAL CORP.
XX
PI   Wands JR,  Scaglioni PP,  Melegari M;
XX
DR   WPI; 1998-193325/17.
XX
PT   DNA encoding proteins which can be incorporated with wild type
PT   nucleo:capsid sub:unit(s) into a viral nucleo:capsid - useful for
PT   inhibition of viral replication, especially hepatitis B virus.
XX
PS   Claim 11; Page 40; 60pp; English.
XX
CC   This polypeptide comprises the hepatitis B virus (HBV) 22 kDa (p22)
CC   protein with an added N-terminal Met residue. p22 is produced by
CC   elimination of the 19-amino acid leader peptide from the 25 kDa full-
CC   length HBV precore protein (see AAW50250). Evidence is provided that HBV
CC   replication is inhibited in the presence of high levels of HBV precore or
CC   precore-related proteins. These proteins can be incorporated into HBV
CC   nucleocapsids along with the p21 core protein (see AAW50251), which is
CC   the usual nucleocapsid component, and thereby render the nucleocapsids
CC   deficient in encapsidating HBV pregenomic RNA. Thus, over-expression of
CC   the precore proteins, or certain variants of them, leads to transdominant
CC   inhibition of HBV replication. Suitable inhibitory proteins include p25
CC   (see AAW50250), p22, Met-p22, p18 (see AAW50236), Met-p18 (see AAW50237)
CC   and Met-p18-Het (see AAW50238). Heterologous peptides (see AAW50244-49)
CC   may be inserted into the p22 and Met-p22 polypeptides. The inhibitory
CC   proteins can be produced by recombinant methods using claimed expression
CC   vectors and host cells. They can be provided exogenously to the target
CC   cells for use in inhibiting HBV replication. Alternatively, a nucleic
CC   acid construct that directs overexpression of an inhibitory protein in
CC   target cells is used for the gene therapy of HBV infection
XX
SQ   Sequence 194 AA;

  Query Match             100.0%;  Score 793;  DB 2;  Length 194;
  Best Local Similarity   100.0%;  Pred. No. 1e-84;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         12 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 71

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         72 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 131

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
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```
Db        132 SFGVWIRTPPAYRPPNAPILSTLPETTVV 160


RESULT 14
AAW50250
ID   AAW50250 standard; protein; 212 AA.
XX
AC   AAW50250;
XX
DT   28-SEP-1998  (first entry)
XX
DE   Hepatitis B virus precore p25 polypeptide.
XX
KW   Viral replication; inhibitor; HBV; nucleocapsid; gene therapy;
KW   hepatocyte; liver; p25 protein.
XX
OS   Hepatitis B virus.
XX
PN   WO9809649-A1.
XX
PD   12-MAR-1998.
XX
PF   03-SEP-1997;   97WO-US015500.
XX
PR   03-SEP-1996;   96US-0025370P.
XX
PA   (GEHO ) GEN HOSPITAL CORP.
XX
PI   Wands JR,  Scaglioni PP,  Melegari M;
XX
DR   WPI; 1998-193325/17.
XX
PT   DNA encoding proteins which can be incorporated with wild type
PT   nucleo:capsid sub:unit(s) into a viral nucleo:capsid - useful for
PT   inhibition of viral replication, especially hepatitis B virus.
XX
PS   Claim 15; Page 35; 60pp; English.
XX
CC   This polypeptide comprises the hepatitis B virus (HBV) 25 kDa (p25)
CC   protein that is encoded by the full-length HBV precore gene. Evidence is
CC   provided that HBV replication is inhibited in the presence of high levels
CC   of HBV precore or precore-related proteins. These proteins can be
CC   incorporated into HBV nucleocapsids along with the p21 core protein (see
CC   AAW50251), which is the usual nucleocapsid component, and thereby render
CC   the nucleocapsids deficient in encapsidating HBV pregenomic RNA. Thus,
CC   over- expression of the precore proteins, or certain variants of them,
CC   leads to transdominant inhibition of HBV replication. Suitable inhibitory
CC   proteins include p25, p22 (see AAW50241), Met-p22 (see AAW50242), p18
CC   (see AAW50236), Met-p18 (see AAW50237) and Met-p18-Het (see AAW50238).
CC   The inhibitory proteins can be produced by recombinant methods using
CC   claimed expression vectors and host cells. They can be provided
CC   exogenously to the target cells for use in inhibiting HBV replication.
CC   Alternatively, a nucleic acid construct that directs overexpression of an
CC   inhibitory protein in target cells is used for the gene therapy of HBV
CC   infection
XX
SQ   Sequence 212 AA;

  Query Match           100.0%;  Score 793;  DB 2;  Length 212;
  Best Local Similarity  100.0%;  Pred. No. 1.2e-84;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        150 SFGVWIRTPPAYRPPNAPILSTLPETTVV 178


RESULT 15
AAU80921
ID   AAU80921 standard; protein; 212 AA.
XX
AC   AAU80921;
XX
DT   09-APR-2002  (first entry)
XX
DE   Hepatitis B virus core antigen variant (HBcAg) #26.
XX
KW   Vaccine; molecular scaffold; pilus; pilin; HBcAg; antigen;
KW   hepatitis B virus capsid protein; JUN; FOS; HIV gp140;
KW   measles virus N protein; bee venom phospholipase; Th type 2 T-helper;
KW   Th2; Sinbis virus E2 protein; amyloid beta; influenza M2 antigen;
KW   human immunodeficiency virus infection; viral hepatitis; measles;
KW   chicken pox; pneumonia; tuberculosis; syphilis; malaria; allergy; cancer;
KW   chronic disease; arthritis; colitis; diabetes; multiple sclerosis.
XX
OS   Hepatitis B virus.
XX
PN   WO200185208-A2.
XX
PD   15-NOV-2001.
XX
PF   02-MAY-2001; 2001WO-IB000741.
XX
PR   05-MAY-2000; 2000US-0202341P.
XX
PA   (CYTO-) CYTOS BIOTECHNOLOGY AG.
PA   (SEBB/) SEBBEL P.
PA   (DUNA/) DUNANT N.
PA   (BACH/) BACHMANN M.
PA   (TISS/) TISSOT A.
PA   (LECH/) LECHENER F.
XX
PI   Sebbel P,  Dunant N,  Bachmann M,  Tissot A,  Lechener F;
XX
DR   WPI; 2002-055561/07.
XX
PT   New composition, useful for vaccine production, comprises antigen or
PT   antigenic determinant and non-natural molecular scaffold comprising
PT   organizer and core particle such as bacterial pilus or pilin protein.
XX
PS   Disclosure; Page 227-228; 287pp; English.
XX
CC   The invention relates to a composition comprising: (a) a non-natural
CC   molecular scaffold (molecular scaffold) which comprises a core particle
CC   such as a bacterial pilus or pilin protein, a recombinant form of the
CC   protein, a virus-like particle or a hepatitis B virus capsid protein
CC   (HBcAg), and an organiser; and (b) an antigen or antigenic determinant,
CC   where the molecular scaffold and antigenic determinant interact to form
CC   an ordered and repetitive antigen array. Suitable antigenic determinants
CC   include JUN, FOS, HIV gp140, measles virus N protein, bee venom
CC   phospholipase, Sinbis virus E2 protein, amyloid beta derived peptides and
CC   influenza M2 antigen. The composition (or vaccine) is useful for
CC   immunisation, by administration to a subject, where the administration
CC   produces an immune response, such as humoral, cellular or protective
CC   immune response, preferably a Th type 2 T-helper (Th2) response that is
CC   specific for the antigenic determinant. The administration induces
CC   antibodies specific for the antigenic determinant of a subtype
CC   corresponding to the Th2 subtype in the subject. The subject does not
CC   generate a Th2 subtype that is specific for pilus or pilin polypeptide or
CC   antigenic determinant. The composition is useful for the production of
CC   vaccines for prevention of infectious diseases such as human
CC   immunodeficiency virus, viral hepatitis, measles, chicken pox, pneumonia,
CC   tuberculosis, syphilis, malaria, and for treating allergy, cancer, and
CC   chronic diseases induced or accelerated by a Th1 type immune response,
CC   such as arthritis, colitis, diabetes and multiple sclerosis. The
CC   composition is useful to generate defined self-specific antibodies and
CC   specific immune responses of the Th2 type and allows the creation of
CC   highly efficient vaccines against infectious diseases, and for treating
```

CC allergy, cancer, and chronic diseases induced or accelerated by a Th1
CC type immune response. The present sequence is a peptide or protein
CC incorporated into the compositions of the invention
XX
SQ Sequence 212 AA;

Query Match 100.0%; Score 793; DB 5; Length 212;
Best Local Similarity 100.0%; Pred. No. 1.2e-84;
Matches 149; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        150 SFGVWIRTPPAYRPPNAPILSTLPETTVV 178
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Search completed: April 23, 2004, 16:28:16
Job time : 58 secs

OM protein - protein search, using sw model

Run on: April 23, 2004, 16:27:14 ; Search time 23 Seconds
(without alignments)
334.447 Million cell updates/sec

Title: US-09-931-325C-170_COPY_1_149
Perfect score: 793
Sequence: 1 MDIDPYKEFGATVELLSFLP.....PAYRPPNAPILSTLPETTVV 149

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 389414 seqs, 51625971 residues

Total number of hits satisfying chosen parameters: 389414

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued_Patents_AA:*
1: /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*
2: /cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
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4: /cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
5: /cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
6: /cgn2_6/ptodata/2/iaa/backfiles1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	793	100.0	159	3	US-08-445-585-3	Sequence 3, Appli
2	793	100.0	183	3	US-09-248-588-2	Sequence 2, Appli
3	793	100.0	194	3	US-08-968-747-18	Sequence 18, Appl
4	793	100.0	212	3	US-08-968-747-3	Sequence 3, Appli
5	793	100.0	212	4	US-10-104-966-11	Sequence 11, Appl
6	793	100.0	289	5	PCT-US96-10602-8	Sequence 8, Appli
7	793	100.0	346	1	US-08-105-483-217	Sequence 217, App
8	793	100.0	346	1	US-08-709-209-217	Sequence 217, App
9	793	100.0	346	1	US-08-458-101-217	Sequence 217, App
10	793	100.0	397	5	PCT-US96-10602-6	Sequence 6, Appli
11	787	99.2	183	5	PCT-US96-10602-12	Sequence 12, Appl
12	785	99.0	351	5	PCT-US96-10602-4	Sequence 4, Appli
13	778	98.1	183	3	US-08-968-747-20	Sequence 20, Appl
14	778	98.1	193	3	US-08-968-747-2	Sequence 2, Appli
15	775	97.7	185	1	US-07-739-642-2	Sequence 2, Appli
16	775	97.7	185	1	US-07-739-643-2	Sequence 2, Appli
17	775	97.7	185	1	US-07-739-142-2	Sequence 2, Appli
18	775	97.7	185	4	US-09-851-120-6	Sequence 6, Appli
19	772	97.4	185	3	US-09-248-588-6	Sequence 6, Appli
20	771	97.2	185	1	US-07-739-642-4	Sequence 4, Appli
21	771	97.2	185	1	US-07-739-643-4	Sequence 4, Appli
22	771	97.2	185	1	US-07-739-142-4	Sequence 4, Appli
23	770	97.1	154	3	US-08-968-747-1	Sequence 1, Appli
24	770	97.1	155	3	US-08-968-747-17	Sequence 17, Appl
25	770	97.1	161	3	US-08-968-747-19	Sequence 19, Appl
26	767.5	96.8	199	3	US-08-968-747-21	Sequence 21, Appl
27	767	96.7	214	1	US-07-739-642-12	Sequence 12, Appl
28	767	96.7	214	1	US-07-739-643-12	Sequence 12, Appl
29	767	96.7	214	1	US-07-739-142-12	Sequence 12, Appl
30	763	96.2	185	1	US-07-739-642-10	Sequence 10, Appl
31	763	96.2	185	1	US-07-739-643-10	Sequence 10, Appl
32	763	96.2	185	1	US-07-739-142-10	Sequence 10, Appl
33	760	95.8	183	3	US-09-248-588-4	Sequence 4, Appli
34	760	95.8	185	1	US-07-739-642-8	Sequence 8, Appli
35	760	95.8	185	1	US-07-739-643-8	Sequence 8, Appli
36	760	95.8	185	1	US-07-739-142-8	Sequence 8, Appli
37	757	95.5	214	1	US-07-739-642-6	Sequence 6, Appli
38	757	95.5	214	1	US-07-739-643-6	Sequence 6, Appli
39	757	95.5	214	1	US-07-739-142-6	Sequence 6, Appli
40	746	94.1	212	4	US-09-719-528A-4	Sequence 4, Appli
41	734.5	92.6	211	6	5196194-13	Patent No. 5196194
42	538	67.8	188	3	US-09-248-588-7	Sequence 7, Appli
43	534.5	67.4	217	3	US-09-248-588-9	Sequence 9, Appli
44	529	66.7	346	5	PCT-US96-10602-2	Sequence 2, Appli
45	132	16.6	305	3	US-09-248-588-11	Sequence 11, Appl

ALIGNMENTS

RESULT 1
US-08-445-585-3
; Sequence 3, Application US/08445585
; Patent No. 6277631
; GENERAL INFORMATION:
; APPLICANT: No. 6277631h, Michael
; APPLICANT: Broeker, Michael
; TITLE OF INVENTION: Recombinant Proteins with the
; TITLE OF INVENTION: Immunoreactivity of Hepatitis B Virus E Antigen (HBeAG), A
; TITLE OF INVENTION: Process for the Preparation Thereof and the Use Thereof in
; TITLE OF INVENTION: Immunoassays and Vaccines
; NUMBER OF SEQUENCES: 12
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Finnegan, Henderson, Farabow, Garrett &
; ADDRESSEE: Dunner
; STREET: 1300 I Street, N.W., Suite 700
; CITY: Washington
; STATE: D.C.
; COUNTRY: USA
; ZIP: 20005-3315
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/445,585
; FILING DATE: 22-MAY-1995
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/846,194
; FILING DATE: 06-MAR-1992
; APPLICATION NUMBER: DE P 41 07 612.5
; FILING DATE: 03-SEP-1991
; ATTORNEY/AGENT INFORMATION:
; NAME: Ogden, Stasia L.
; REGISTRATION NUMBER: P-36,228
; REFERENCE/DOCKET NUMBER: 02481.1162-00000
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 202-408-4000
; TELEFAX: 202-408-4400
; INFORMATION FOR SEQ ID NO: 3:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 159 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-445-585-3

Query Match 100.0%; Score 793; DB 3; Length 159;

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  Best Local Similarity   100.0%;  Pred. No. 3.1e-87;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

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Db         11 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 70

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         71 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 130

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
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Db        131 SFGVWIRTPPAYRPPNAPILSTLPETTVV 159


RESULT 2
US-09-248-588-2
; Sequence 2, Application US/09248588
; Patent No. 6231864
; GENERAL INFORMATION:
;  APPLICANT: Birkett, Ashley J.
;  TITLE OF INVENTION: Strategically Modified Hepatitis B Core Proteins and
;  TITLE OF INVENTION: their Derivatives
;  FILE REFERENCE: SYN-101 4564/69529
;  CURRENT APPLICATION NUMBER: US/09/248,588
;  CURRENT FILING DATE: 1999-02-11
;  EARLIER APPLICATION NUMBER: 60/074537
;  EARLIER FILING DATE: 1998-02-12
;  NUMBER OF SEQ ID NOS: 113
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 2
;   LENGTH: 183
;   TYPE: PRT
;   ORGANISM: Hepatitis B virus
US-09-248-588-2

  Query Match             100.0%;  Score 793;  DB 3;  Length 183;
  Best Local Similarity   100.0%;  Pred. No. 3.7e-87;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 3
US-08-968-747-18
; Sequence 18, Application US/08968747
; Patent No. 6060595
;  GENERAL INFORMATION:
;    APPLICANT:  Scaglioni et al.
;    TITLE OF INVENTION:  INHIBITION OF VIRAL REPLICATION
;    NUMBER OF SEQUENCES:  21
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Fish & Richardson P.C.
;      STREET:  225 Franklin Street
;      CITY:  Boston
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  02110-2804
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  Windows
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/968,747
;      FILING DATE:  03-SEP-1997
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Fraser, Janis K.
;      REGISTRATION NUMBER:  34,819
;      REFERENCE/DOCKET NUMBER:  08472/705001
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  617/542-5070
;      TELEFAX:  617/542-8906
;      TELEX:  200154
;  INFORMATION FOR SEQ ID NO:  18:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  194 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-968-747-18

  Query Match             100.0%;  Score 793;  DB 3;  Length 194;
  Best Local Similarity   100.0%;  Pred. No. 4.1e-87;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         12 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 71

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
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Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        132 SFGVWIRTPPAYRPPNAPILSTLPETTVV 160


RESULT 4
US-08-968-747-3
; Sequence 3, Application US/08968747
; Patent No. 6060595
;  GENERAL INFORMATION:
;    APPLICANT:  Scaglioni et al.
;    TITLE OF INVENTION:  INHIBITION OF VIRAL REPLICATION
;    NUMBER OF SEQUENCES:  21
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Fish & Richardson P.C.
;      STREET:  225 Franklin Street
;      CITY:  Boston
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  02110-2804
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  Windows
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/968,747
;      FILING DATE:  03-SEP-1997
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Fraser, Janis K.
;      REGISTRATION NUMBER:  34,819
;      REFERENCE/DOCKET NUMBER:  08472/705001
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  617/542-5070
;      TELEFAX:  617/542-8906
;      TELEX:  200154
;  INFORMATION FOR SEQ ID NO:  3:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  212 amino acids
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;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-968-747-3

  Query Match             100.0%;  Score 793;  DB 3;  Length 212;
  Best Local Similarity   100.0%;  Pred. No. 4.6e-87;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        150 SFGVWIRTPPAYRPPNAPILSTLPETTVV 178


RESULT 5
US-10-104-966-11
; Sequence 11, Application US/10104966
; Patent No. 6680059
; GENERAL INFORMATION:
;  APPLICANT: Matti Sallberg
;  APPLICANT:  Catharina Hultgren
;  TITLE OF INVENTION: VACCINES CONTAINING RIBAVIRIN AND
;  TITLE OF INVENTION:  METHODS OF USE THEREOF
;  FILE REFERENCE: TRIPEP.23AUSC1
;  CURRENT APPLICATION NUMBER: US/10/104,966
;  CURRENT FILING DATE:  2002-03-22
;  PRIOR APPLICATION NUMBER: 09/705,547
;  PRIOR FILING DATE: 2000-11-03
;  PRIOR APPLICATION NUMBER: 60/229,175
;  PRIOR FILING DATE: 2000-08-29
;  NUMBER OF SEQ ID NOS: 15
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 11
;    LENGTH: 212
;    TYPE: PRT
;    ORGANISM: Artificial Sequence
;    FEATURE:
;    OTHER INFORMATION: Hepatitis B virus C antigen and e antigen
;    OTHER INFORMATION: (HBcAg/HBeAg) sequence
US-10-104-966-11

  Query Match             100.0%;  Score 793;  DB 4;  Length 212;
  Best Local Similarity   100.0%;  Pred. No. 4.6e-87;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        150 SFGVWIRTPPAYRPPNAPILSTLPETTVV 178


RESULT 6
PCT-US96-10602-8
; Sequence 8, Application PC/TUS9610602
;  GENERAL INFORMATION:
;    APPLICANT:  The General Hospital Corporation
;    TITLE OF INVENTION:  INHIBITION OF HEPATITIS B REPLICATION
;    NUMBER OF SEQUENCES:  14
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Fish & Richardson P.C.
;      STREET:  225 Franklin Street
;      CITY:  Boston
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  02110-2804
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  PCT/US96/10602
;      FILING DATE:
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  60/017,814
;      FILING DATE:  20-JUN-1995
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Clark, Paul T.
;      REGISTRATION NUMBER:  30,162
;      REFERENCE/DOCKET NUMBER:  00786/282001
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  617/542-5070
;      TELEFAX:  617/542-8906
;      TELEX:  200154
;  INFORMATION FOR SEQ ID NO:  8:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  289 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
PCT-US96-10602-8

  Query Match             100.0%;  Score 793;  DB 5;  Length 289;
  Best Local Similarity   100.0%;  Pred. No. 7.1e-87;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 7
US-08-105-483-217
; Sequence 217, Application US/08105483
; Patent No. 5494807
;  GENERAL INFORMATION:
;    APPLICANT:  Paoletti, Enzo
;    TITLE OF INVENTION:  GENETICALLY ENGINEERED VACCINE
;    TITLE OF INVENTION:  STRAIN
;    NUMBER OF SEQUENCES:  462
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Curtis, Morris & Safford
;      ADDRESSEE:  c/o William S. Frommer
;      STREET:  530 Fifth Avenue
;      CITY:  New York
;      STATE:  NY
;      COUNTRY:  USA
;      ZIP:  10036
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
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;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/105,483
;      FILING DATE:  12-AUG-1993
;      CLASSIFICATION:  424
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 07/847,951
;      FILING DATE:  06-MAR-1992
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Frommer, William S.
;      REGISTRATION NUMBER:  25,506
;      REFERENCE/DOCKET NUMBER:  454310-2400
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 840-3333
;      TELEFAX:  (212) 840-0712
;  INFORMATION FOR SEQ ID NO:  217:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  346 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
US-08-105-483-217

  Query Match             100.0%;  Score 793;  DB 1;  Length 346;
  Best Local Similarity   100.0%;  Pred. No. 9.1e-87;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        164 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 223

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        224 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 283

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        284 SFGVWIRTPPAYRPPNAPILSTLPETTVV 312


RESULT 8
US-08-709-209-217
; Sequence 217, Application US/08709209
; Patent No. 5762938
;  GENERAL INFORMATION:
;    APPLICANT:  Paoletti, Enzo
;    TITLE OF INVENTION:  GENETICALLY ENGINEERED VACCINE
;    TITLE OF INVENTION:  STRAIN
;    NUMBER OF SEQUENCES:  462
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Curtis, Morris & Safford
;      ADDRESSEE:  c/o William S. Frommer
;      STREET:  530 Fifth Avenue
;      CITY:  New York
;      STATE:  NY
;      COUNTRY:  USA
;      ZIP:  10036
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/709,209
;      FILING DATE:  21-AUG-1996
;      CLASSIFICATION:  424
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/105,483
;      FILING DATE:  12-AUG-1993
;      APPLICATION NUMBER:  US 07/847,951
;      FILING DATE:  06-MAR-1992
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Frommer, William S.
;      REGISTRATION NUMBER:  25,506
;      REFERENCE/DOCKET NUMBER:  454310-2400
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 840-3333
;      TELEFAX:  (212) 840-0712
;  INFORMATION FOR SEQ ID NO:  217:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  346 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
US-08-709-209-217

  Query Match             100.0%;  Score 793;  DB 1;  Length 346;
  Best Local Similarity   100.0%;  Pred. No. 9.1e-87;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        164 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 223

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        224 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 283

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        284 SFGVWIRTPPAYRPPNAPILSTLPETTVV 312


RESULT 9
US-08-458-101-217
; Sequence 217, Application US/08458101
; Patent No. 5766599
;  GENERAL INFORMATION:
;    APPLICANT:  Paoletti, Enzo
;    APPLICANT:  Perkus, Marion E.
;    APPLICANT:  Taylor, Jill
;    APPLICANT:  Tartaglia, James
;    APPLICANT:  No. 5766599ton, Elizabeth K.
;    APPLICANT:  Riviere, Michel
;    APPLICANT:  de Taisne, Charles
;    APPLICANT:  Limbach, Keith J.
;    APPLICANT:  Johnson, Gerard P.
;    APPLICANT:  Pincus, Steven E.
;    APPLICANT:  Cox, William I.
;    APPLICANT:  Audonnet, Jean-Christophe Francis
;    APPLICANT:  Gettig, Russell Robert
;    TITLE OF INVENTION:  GENETICALLY ENGINEERED VACCINE
;    TITLE OF INVENTION:  STRAIN
;    NUMBER OF SEQUENCES:  467
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Curtis, Morris & Safford
;      ADDRESSEE:  c/o William S. Frommer
;      STREET:  530 Fifth Avenue
;      CITY:  New York
;      STATE:  NY
;      COUNTRY:  USA
;      ZIP:  10036
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/458,101
;      FILING DATE:  01-JUN-1995
;      CLASSIFICATION:  424
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Frommer, William S.
;      REGISTRATION NUMBER:  25,506
;      REFERENCE/DOCKET NUMBER:  454310-2740
```

```
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 840-3333
;      TELEFAX:  (212) 840-0712
;  INFORMATION FOR SEQ ID NO:  217:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  346 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
US-08-458-101-217

  Query Match            100.0%;  Score 793;  DB 1;  Length 346;
  Best Local Similarity  100.0%;  Pred. No. 9.1e-87;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        164 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 223

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        224 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 283

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        284 SFGVWIRTPPAYRPPNAPILSTLPETTVV 312


RESULT 10
PCT-US96-10602-6
; Sequence 6, Application PC/TUS9610602
;  GENERAL INFORMATION:
;    APPLICANT:  The General Hospital Corporation
;    TITLE OF INVENTION:  INHIBITION OF HEPATITIS B REPLICATION
;    NUMBER OF SEQUENCES:  14
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Fish & Richardson P.C.
;      STREET:  225 Franklin Street
;      CITY:  Boston
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  02110-2804
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  PCT/US96/10602
;      FILING DATE:
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  60/017,814
;      FILING DATE:  20-JUN-1995
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Clark, Paul T.
;      REGISTRATION NUMBER:  30,162
;      REFERENCE/DOCKET NUMBER:  00786/282001
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  617/542-5070
;      TELEFAX:  617/542-8906
;      TELEX:  200154
;  INFORMATION FOR SEQ ID NO:  6:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  397 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
PCT-US96-10602-6

  Query Match            100.0%;  Score 793;  DB 5;  Length 397;
  Best Local Similarity  100.0%;  Pred. No. 1.1e-86;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 11
PCT-US96-10602-12
; Sequence 12, Application PC/TUS9610602
;  GENERAL INFORMATION:
;    APPLICANT:  The General Hospital Corporation
;    TITLE OF INVENTION:  INHIBITION OF HEPATITIS B REPLICATION
;    NUMBER OF SEQUENCES:  14
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Fish & Richardson P.C.
;      STREET:  225 Franklin Street
;      CITY:  Boston
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  02110-2804
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  PCT/US96/10602
;      FILING DATE:
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  60/017,814
;      FILING DATE:  20-JUN-1995
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Clark, Paul T.
;      REGISTRATION NUMBER:  30,162
;      REFERENCE/DOCKET NUMBER:  00786/282001
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  617/542-5070
;      TELEFAX:  617/542-8906
;      TELEX:  200154
;  INFORMATION FOR SEQ ID NO:  12:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  183 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
PCT-US96-10602-12

  Query Match            99.2%;  Score 787;  DB 5;  Length 183;
  Best Local Similarity  99.3%;  Pred. No. 2e-86;
  Matches  148;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGTETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
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```
RESULT 12
PCT-US96-10602-4
; Sequence 4, Application PC/TUS9610602
;  GENERAL INFORMATION:
;    APPLICANT:  The General Hospital Corporation
;    TITLE OF INVENTION:  INHIBITION OF HEPATITIS B REPLICATION
;    NUMBER OF SEQUENCES:  14
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Fish & Richardson P.C.
;      STREET:  225 Franklin Street
;      CITY:  Boston
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  02110-2804
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  PCT/US96/10602
;      FILING DATE:
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  60/017,814
;      FILING DATE:  20-JUN-1995
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Clark, Paul T.
;      REGISTRATION NUMBER:  30,162
;      REFERENCE/DOCKET NUMBER:  00786/282001
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  617/542-5070
;      TELEFAX:  617/542-8906
;      TELEX:  200154
;  INFORMATION FOR SEQ ID NO:  4:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  351 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
PCT-US96-10602-4

  Query Match             99.0%;  Score 785;  DB 5;  Length 351;
  Best Local Similarity   98.7%;  Pred. No. 8.4e-86;
  Matches  147;  Conservative    1;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          4 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 63

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         64 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 123

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||| ||:
Db        124 SFGVWIRTPPAYRPPNAPILSTLPEHTVI 152


RESULT 13
US-08-968-747-20
; Sequence 20, Application US/08968747
; Patent No. 6060595
;  GENERAL INFORMATION:
;    APPLICANT:  Scaglioni et al.
;    TITLE OF INVENTION:  INHIBITION OF VIRAL REPLICATION
;    NUMBER OF SEQUENCES:  21
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Fish & Richardson P.C.
;      STREET:  225 Franklin Street
;      CITY:  Boston
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  02110-2804
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  Windows
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/968,747
;      FILING DATE:  03-SEP-1997
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Fraser, Janis K.
;      REGISTRATION NUMBER:  34,819
;      REFERENCE/DOCKET NUMBER:  08472/705001
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  617/542-5070
;      TELEFAX:  617/542-8906
;      TELEX:  200154
;  INFORMATION FOR SEQ ID NO:  20:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  183 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  not relevant
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-968-747-20

  Query Match             98.1%;  Score 778;  DB 3;  Length 183;
  Best Local Similarity   98.7%;  Pred. No. 2.4e-85;
  Matches  147;  Conservative    1;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||:||||||||||||| ||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVDTNMGLKFRQLLWFMISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 14
US-08-968-747-2
; Sequence 2, Application US/08968747
; Patent No. 6060595
;  GENERAL INFORMATION:
;    APPLICANT:  Scaglioni et al.
;    TITLE OF INVENTION:  INHIBITION OF VIRAL REPLICATION
;    NUMBER OF SEQUENCES:  21
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Fish & Richardson P.C.
;      STREET:  225 Franklin Street
;      CITY:  Boston
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  02110-2804
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  Windows
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/968,747
;      FILING DATE:  03-SEP-1997
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Fraser, Janis K.
```

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;      REGISTRATION NUMBER:  34,819
;      REFERENCE/DOCKET NUMBER:  08472/705001
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  617/542-5070
;      TELEFAX:  617/542-8906
;      TELEX:  200154
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  193 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  not relevant
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-968-747-2

  Query Match           98.1%;  Score 778;  DB 3;  Length 193;
  Best Local Similarity  98.7%;  Pred. No. 2.5e-85;
  Matches  147;  Conservative    1;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
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Db         11 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 70

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
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Db         71 CWGELMTLATWVGVNLEDPASRDLVVSYVDTNMGLKFRQLLWFMISCLTFGRETVIEYLV 130

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
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RESULT 15
US-07-739-642-2
; Sequence 2, Application US/07739642
; Patent No. 5173427
;  GENERAL INFORMATION:
;    APPLICANT:  Mallonee,, Richard L.
;    TITLE OF INVENTION:  Vectors And Hosts With Increased
;    TITLE OF INVENTION:  Expression Of HBcAg
;    NUMBER OF SEQUENCES:  24
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Richard R. Rodrick
;      STREET:  1 Becton Drive
;      CITY:  Franklin Lakes
;      STATE:  New Jersey
;      COUNTRY:  U.S.A.
;      ZIP:  07417-1880
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/739,642
;      FILING DATE:  19910801
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Stierwalt,, Brian K.
;      REGISTRATION NUMBER:  33,213
;      REFERENCE/DOCKET NUMBER:  P-2272
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  201-848-5317
;      TELEFAX:  201-848-9228
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  185 amino acids
;      TYPE:  AMINO ACID
;      TOPOLOGY:  linear
US-07-739-642-2

  Query Match           97.7%;  Score 775;  DB 1;  Length 185;
  Best Local Similarity  97.3%;  Pred. No. 5.5e-85;
  Matches  145;  Conservative    2;  Mismatches    2;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
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Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
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Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


Search completed: April 23, 2004, 16:30:53
Job time : 30 secs
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GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: April 23, 2004, 16:29:45 ; Search time 42 Seconds
(without alignments)
980.829 Million cell updates/sec

Title: US-09-931-325C-170_COPY_1_149
Perfect score: 793
Sequence: 1 MDIDPYKEFGATVELLSFLP.....PAYRPPNAPILSTLPETTVV 149

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1133595 seqs, 276475211 residues

Total number of hits satisfying chosen parameters: 1133595

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Published_Applications_AA:*
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2: /cgn2_6/ptodata/2/pubpaa/PCT_NEW_PUB.pep:*
3: /cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*
4: /cgn2_6/ptodata/2/pubpaa/US06_PUBCOMB.pep:*
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7: /cgn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep:*
8: /cgn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep:*
9: /cgn2_6/ptodata/2/pubpaa/US09A_PUBCOMB.pep:*
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12: /cgn2_6/ptodata/2/pubpaa/US09_NEW_PUB.pep:*
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17: /cgn2_6/ptodata/2/pubpaa/US60_NEW_PUB.pep:*
18: /cgn2_6/ptodata/2/pubpaa/US60_PUBCOMB.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	793	100.0	171	10	US-09-930-915A-263	Sequence 263, App
2	793	100.0	183	8	US-08-785-997-38	Sequence 38, Appl
3	793	100.0	183	10	US-09-387-340-38	Sequence 38, Appl
4	793	100.0	183	10	US-09-848-616-99	Sequence 99, Appl
5	793	100.0	183	10	US-09-931-325A-170	Sequence 170, App
6	793	100.0	183	10	US-09-386-591-38	Sequence 38, Appl
7	793	100.0	183	10	US-09-930-915A-247	Sequence 247, App
8	793	100.0	183	12	US-10-289-456-39	Sequence 39, Appl
9	793	100.0	183	12	US-10-274-616-1	Sequence 1, Appli
10	793	100.0	183	14	US-10-243-739-39	Sequence 39, Appl
11	793	100.0	183	14	US-10-244-065-39	Sequence 39, Appl
12	793	100.0	183	14	US-10-289-454-39	Sequence 39, Appl
13	793	100.0	183	14	US-10-050-902-99	Sequence 99, Appl
14	793	100.0	183	14	US-10-050-898-99	Sequence 99, Appl
15	793	100.0	183	14	US-10-080-299-1	Sequence 1, Appli
16	793	100.0	183	14	US-10-082-014-1	Sequence 1, Appli
17	793	100.0	183	14	US-10-372-076-1	Sequence 1, Appli
18	793	100.0	183	15	US-10-346-190-39	Sequence 39, Appl
19	793	100.0	183	15	US-10-465-811-30	Sequence 30, Appl
20	793	100.0	212	9	US-09-929-955-11	Sequence 11, Appl
21	793	100.0	212	10	US-09-848-616-114	Sequence 114, App
22	793	100.0	212	12	US-10-289-456-54	Sequence 54, Appl
23	793	100.0	212	12	US-10-312-045-2	Sequence 2, Appli
24	793	100.0	212	13	US-10-104-966-11	Sequence 11, Appl
25	793	100.0	212	14	US-10-243-739-54	Sequence 54, Appl
26	793	100.0	212	14	US-10-244-065-54	Sequence 54, Appl
27	793	100.0	212	14	US-10-289-454-54	Sequence 54, Appl
28	793	100.0	212	14	US-10-050-902-114	Sequence 114, App
29	793	100.0	212	14	US-10-050-898-114	Sequence 114, App
30	793	100.0	212	15	US-10-346-190-54	Sequence 54, Appl
31	793	100.0	212	15	US-10-465-811-45	Sequence 45, Appl
32	793	100.0	289	9	US-09-812-862-8	Sequence 8, Appli
33	793	100.0	397	9	US-09-812-862-6	Sequence 6, Appli
34	791	99.7	183	10	US-09-848-616-102	Sequence 102, App
35	791	99.7	183	12	US-10-289-456-42	Sequence 42, Appl
36	791	99.7	183	14	US-10-243-739-42	Sequence 42, Appl
37	791	99.7	183	14	US-10-244-065-42	Sequence 42, Appl
38	791	99.7	183	14	US-10-289-454-42	Sequence 42, Appl
39	791	99.7	183	14	US-10-050-902-102	Sequence 102, App
40	791	99.7	183	14	US-10-050-898-102	Sequence 102, App
41	791	99.7	183	15	US-10-346-190-42	Sequence 42, Appl
42	791	99.7	183	15	US-10-465-811-33	Sequence 33, Appl
43	790	99.6	183	10	US-09-848-616-104	Sequence 104, App
44	790	99.6	183	10	US-09-848-616-105	Sequence 105, App
45	790	99.6	183	12	US-10-289-456-44	Sequence 44, Appl

ALIGNMENTS

RESULT 1
US-09-930-915A-263
; Sequence 263, Application US/09930915A
; Publication No. US20030138769A1
; GENERAL INFORMATION:
; APPLICANT: Birkett, Ashley J.
; TITLE OF INVENTION: IMMUNOGENIC HBc CHIMER PARTICLES HAVING ENHANCED
; TITLE OF INVENTION: STABILITY
; FILE REFERENCE: 4564/83501 ICC-102.2 PCT
; CURRENT APPLICATION NUMBER: US/09/930,915A
; CURRENT FILING DATE: 2001-08-15
; PRIOR APPLICATION NUMBER: 60/226,867
; PRIOR FILING DATE: 2000-08-22
; PRIOR APPLICATION NUMBER: 60/225,843
; PRIOR FILING DATE: 2000-08-16
; NUMBER OF SEQ ID NOS: 313
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 263
; LENGTH: 171
; TYPE: PRT
; ORGANISM: Plasmodium falciparum
US-09-930-915A-263

Query Match 100.0%; Score 793; DB 10; Length 171;
Best Local Similarity 100.0%; Pred. No. 1.3e-80;
Matches 149; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
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Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
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RESULT 2
US-08-785-997-38
; Sequence 38, Application US/08785997
; Publication No. US20030021804A1
;  GENERAL INFORMATION:
;    APPLICANT:  Needleman, Philip
;    APPLICANT:  Glenn, Kevin
;    TITLE OF INVENTION:  An Immunological Process for Increasing
;    TITLE OF INVENTION:  the HDL Cholesterol Concentration
;    NUMBER OF SEQUENCES:  50
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Welsh & Katz, Ltd.
;      STREET:  120 South Riverside Plaza, 22nd Floor
;      CITY:  Chicago
;      STATE:  IL
;      COUNTRY:  USA
;      ZIP:  60606
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/785,997
;      FILING DATE:
;      CLASSIFICATION:  424
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Gamson Ph.D., Edward P.
;      REGISTRATION NUMBER:  29,381
;      REFERENCE/DOCKET NUMBER:  MON-101.0 6018/68346
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (312)655-1500
;      TELEFAX:  (312)655-1501
;  INFORMATION FOR SEQ ID NO:  38:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  183 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-785-997-38

  Query Match           100.0%;  Score 793;  DB 8;  Length 183;
  Best Local Similarity  100.0%;  Pred. No. 1.5e-80;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
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Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
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Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 3
US-09-387-340-38
; Sequence 38, Application US/09387340
; Publication No. US20030026808A1
;  GENERAL INFORMATION:
;    APPLICANT:  Needleman, Philip
;    APPLICANT:  Glenn, Kevin
;    APPLICANT:  Krul, Elaine
;    APPLICANT:  Gamson, Edward P.
;    TITLE OF INVENTION:  An Immunological Process and Constructs
;    TITLE OF INVENTION:  for Increasing the HDL Cholesterol Concentration
;    NUMBER OF SEQUENCES:  50
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Welsh & Katz, Ltd.
;      STREET:  120 South Riverside Plaza, 22nd Floor
;      CITY:  Chicago
;      STATE:  IL
;      COUNTRY:  USA
;      ZIP:  60606
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/387,340
;      FILING DATE:
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Gamson, Edward P.
;      REGISTRATION NUMBER:  29,381
;      REFERENCE/DOCKET NUMBER:  MON-102.0 6018/69242
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (312)655-1500
;      TELEFAX:  (312)655-1501
;  INFORMATION FOR SEQ ID NO:  38:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  183 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-09-387-340-38

  Query Match           100.0%;  Score 793;  DB 10;  Length 183;
  Best Local Similarity  100.0%;  Pred. No. 1.5e-80;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
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Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
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Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 4
US-09-848-616-99
; Sequence 99, Application US/09848616
; Publication No. US20030054010A1
; GENERAL INFORMATION:
;  APPLICANT: Sebbel, Peter
;  APPLICANT:  Dunant, Nicolas
;  APPLICANT:  Bachmann, Martin
;  APPLICANT:  Tissot, Alain
;  APPLICANT:  Lechner, Franziska
;  TITLE OF INVENTION: Molecular Antigen Array
;  FILE REFERENCE: 1700.0180002
;  CURRENT APPLICATION NUMBER: US/09/848,616
;  CURRENT FILING DATE:  2001-05-05
;  NUMBER OF SEQ ID NOS: 186
;  SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 99
;   LENGTH: 183
;   TYPE: PRT
;   ORGANISM: Hepatitis B virus
US-09-848-616-99

  Query Match           100.0%;  Score 793;  DB 10;  Length 183;
  Best Local Similarity  100.0%;  Pred. No. 1.5e-80;
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  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

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Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
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Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
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Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 5
US-09-931-325A-170
; Sequence 170, Application US/09931325A
; Publication No. US20030054337A1
; GENERAL INFORMATION:
;  APPLICANT: Birkett, Ashley J.
;  TITLE OF INVENTION: MALARIA IMMUNOGEN AND VACCINE
;  FILE REFERENCE: 4564/83503 ICC-103.1
;  CURRENT APPLICATION NUMBER: US/09/931,325A
;  CURRENT FILING DATE:  2002-02-22
;  PRIOR APPLICATION NUMBER: 60/225,843
;  PRIOR FILING DATE: 2000-08-16
;  PRIOR APPLICATION NUMBER: USSN NOT YET ASSIGND
;  PRIOR FILING DATE: 2001-08-15
;  NUMBER OF SEQ ID NOS: 186
;  SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 170
;   LENGTH: 183
;   TYPE: PRT
;   ORGANISM: Hepatitis B virus
US-09-931-325A-170

  Query Match           100.0%;  Score 793;  DB 10;  Length 183;
  Best Local Similarity  100.0%;  Pred. No. 1.5e-80;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 6
US-09-386-591-38
; Sequence 38, Application US/09386591
; Publication No. US20030100520A1
;  GENERAL INFORMATION:
;    APPLICANT:  Needleman, Philip
;    APPLICANT:  Glenn, Kevin
;    TITLE OF INVENTION:  An Immunological Process and Constructs
;    TITLE OF INVENTION:  for Increasing the HDL Cholesterol Concentration by DNA
;    TITLE OF INVENTION:  Vaccination
;    NUMBER OF SEQUENCES:  52
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Welsh & Katz, Ltd.
;      STREET:  120 South Riverside Plaza, 22nd Floor
;      CITY:  Chicago
;      STATE:  IL
;      COUNTRY:  USA
;      ZIP:  60606
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/386,591
;      FILING DATE:
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Gamson Ph.D., Edward P.
;      REGISTRATION NUMBER:  29,381
;      REFERENCE/DOCKET NUMBER:  MON-103.0 6221/69666
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (312)655-1500
;      TELEFAX:  (312)655-1501
;  INFORMATION FOR SEQ ID NO:  38:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  183 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-09-386-591-38

  Query Match           100.0%;  Score 793;  DB 10;  Length 183;
  Best Local Similarity  100.0%;  Pred. No. 1.5e-80;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 7
US-09-930-915A-247
; Sequence 247, Application US/09930915A
; Publication No. US20030138769A1
; GENERAL INFORMATION:
;  APPLICANT: Birkett, Ashley J.
;  TITLE OF INVENTION: IMMUNOGENIC HBc CHIMER PARTICLES HAVING ENHANCED
;  TITLE OF INVENTION:  STABILITY
;  FILE REFERENCE: 4564/83501 ICC-102.2 PCT
;  CURRENT APPLICATION NUMBER: US/09/930,915A
;  CURRENT FILING DATE:  2001-08-15
;  PRIOR APPLICATION NUMBER: 60/226,867
;  PRIOR FILING DATE: 2000-08-22
;  PRIOR APPLICATION NUMBER: 60/225,843
;  PRIOR FILING DATE: 2000-08-16
;  NUMBER OF SEQ ID NOS: 313
;  SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 247
;   LENGTH: 183
;   TYPE: PRT
;   ORGANISM: Hepatitis B virus
US-09-930-915A-247

  Query Match           100.0%;  Score 793;  DB 10;  Length 183;
  Best Local Similarity  100.0%;  Pred. No. 1.5e-80;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
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                   ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy         121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
               |||||||||||||||||||||||||||||
Db         121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149

RESULT 8
US-10-289-456-39
; Sequence 39, Application US/10289456
; Publication No. US20040033211A1
; GENERAL INFORMATION:
;  APPLICANT: Bachmann, Martin
;  APPLICANT:  Maurer, Patrick
;  APPLICANT:  Spohn, Gunther
;  TITLE OF INVENTION: Antigen Arrays for Treatment of Bone Disease
;  FILE REFERENCE: 1700.0330001
;  CURRENT APPLICATION NUMBER: US/10/289,456
;  CURRENT FILING DATE:  2002-11-07
;  PRIOR APPLICATION NUMBER: PCT/IB02/00166
;  PRIOR FILING DATE: 2002-01-21
;  PRIOR APPLICATION NUMBER: US 10/050,902
;  PRIOR FILING DATE: 2002-01-18
;  PRIOR APPLICATION NUMBER: US 60/396,635
;  PRIOR FILING DATE: 2002-07-19
;  PRIOR APPLICATION NUMBER: US 60/331,045
;  PRIOR FILING DATE: 2001-11-07
;  NUMBER OF SEQ ID NOS: 170
;  SOFTWARE: PatentIn version 3.2
; SEQ ID NO 39
;   LENGTH: 183
;   TYPE: PRT
;   ORGANISM: Hepatitis B virus
US-10-289-456-39

  Query Match             100.0%;  Score 793;  DB 12;  Length 183;
  Best Local Similarity   100.0%;  Pred. No. 1.5e-80;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy           1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db           1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy          61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy         121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
               |||||||||||||||||||||||||||||
Db         121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149

RESULT 9
US-10-274-616-1
; Sequence 1, Application US/10274616
; Publication No. US20030202982A1
; GENERAL INFORMATION:
;  APPLICANT: Birkett, Ashley J.
;  TITLE OF INVENTION: INFLUENZA IMMUNOGEN AND VACCINE
;  FILE REFERENCE: ICC 127.0 4564/88545
;  CURRENT APPLICATION NUMBER: US/10/274,616
;  CURRENT FILING DATE:  2002-10-21
;  PRIOR APPLICATION NUMBER: 09/930,915
;  PRIOR FILING DATE: 2001-08-15
;  PRIOR APPLICATION NUMBER: 10/080,299
;  PRIOR FILING DATE: 2002-02-21
;  NUMBER OF SEQ ID NOS: 87
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 1
;   LENGTH: 183
;   TYPE: PRT
;   ORGANISM: Hepatitis B virus
US-10-274-616-1

  Query Match             100.0%;  Score 793;  DB 12;  Length 183;
  Best Local Similarity   100.0%;  Pred. No. 1.5e-80;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy           1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db           1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy          61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy         121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
               |||||||||||||||||||||||||||||
Db         121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149

RESULT 10
US-10-243-739-39
; Sequence 39, Application US/10243739
; Publication No. US20030091593A1
; GENERAL INFORMATION:
;  APPLICANT: Bachmann, Martin F.
;  APPLICANT:  Storni, Tazio
;  APPLICANT:  Lechner, Franziska
;  TITLE OF INVENTION: In vivo Activation of Antigen Presenting Cells for Enhancement of
;  TITLE OF INVENTION:  Immune Responses Induced by Virus Like Particles
;  FILE REFERENCE: 1700.0210001
;  CURRENT APPLICATION NUMBER: US/10/243,739
;  CURRENT FILING DATE:  2002-09-16
;  PRIOR APPLICATION NUMBER: 60/318,967
;  PRIOR FILING DATE: 2001-09-14
;  NUMBER OF SEQ ID NOS: 73
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 39
;   LENGTH: 183
;   TYPE: PRT
;   ORGANISM: Hepatitis B virus
US-10-243-739-39

  Query Match             100.0%;  Score 793;  DB 14;  Length 183;
  Best Local Similarity   100.0%;  Pred. No. 1.5e-80;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy           1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db           1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy          61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy         121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
               |||||||||||||||||||||||||||||
Db         121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149

RESULT 11
US-10-244-065-39
; Sequence 39, Application US/10244065
; Publication No. US20030099668A1
; GENERAL INFORMATION:
;  APPLICANT: Bachmann, Martin F.
;  APPLICANT:  Storni, Tazio
;  APPLICANT:  Maurer, Patrick
;  APPLICANT:  Tissot, Alain
;  APPLICANT:  Schwarz, Katrin
;  APPLICANT:  Meijerink, Edwin
;  APPLICANT:  Lipowsky, Gerad
;  APPLICANT:  Pumpens, Paul
;  APPLICANT:  Cielens, Indulis
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;  APPLICANT:  Renhofa, Regina
;  TITLE OF INVENTION: Packaging of Immunostimulatory Substances into Virus-like Particl
;  TITLE OF INVENTION:  Method of Preparation and Use
;  FILE REFERENCE: 1700.0220001
;  CURRENT APPLICATION NUMBER: US/10/244,065
;  CURRENT FILING DATE:  2002-09-16
;  PRIOR APPLICATION NUMBER: 60/374,145
;  PRIOR FILING DATE: 2002-04-22
;  PRIOR APPLICATION NUMBER: 60/318,994
;  PRIOR FILING DATE: 2001-09-14
;  NUMBER OF SEQ ID NOS: 73
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 39
;   LENGTH: 183
;   TYPE: PRT
;   ORGANISM: Hepatitis B virus
US-10-244-065-39

  Query Match             100.0%;  Score 793;  DB 14;  Length 183;
  Best Local Similarity   100.0%;  Pred. No. 1.5e-80;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 12
US-10-289-454-39
; Sequence 39, Application US/10289454
; Publication No. US20030157479A1
; GENERAL INFORMATION:
;  APPLICANT: Bachmann, Martin
;  APPLICANT:  Jennings, Gary
;  APPLICANT:  Sonderegger, Ivo
;  TITLE OF INVENTION: Antigen Arrays for Treatments of Allergic Eosinophilic Diseases
;  FILE REFERENCE: 1700.0360001
;  CURRENT APPLICATION NUMBER: US/10/289,454
;  CURRENT FILING DATE:  2003-02-10
;  PRIOR APPLICATION NUMBER: US 60/396,636
;  PRIOR FILING DATE: 2002-07-19
;  PRIOR APPLICATION NUMBER: PCT/IB02/00166
;  PRIOR FILING DATE: 2002-01-21
;  PRIOR APPLICATION NUMBER: US 10/050,902
;  PRIOR FILING DATE: 2002-01-18
;  PRIOR APPLICATION NUMBER: US 60/331,045
;  PRIOR FILING DATE: 2001-11-07
;  NUMBER OF SEQ ID NOS: 386
;  SOFTWARE: PatentIn version 3.2
; SEQ ID NO 39
;   LENGTH: 183
;   TYPE: PRT
;   ORGANISM: Hepatitis B virus
US-10-289-454-39

  Query Match             100.0%;  Score 793;  DB 14;  Length 183;
  Best Local Similarity   100.0%;  Pred. No. 1.5e-80;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 13
US-10-050-902-99
; Sequence 99, Application US/10050902
; Publication No. US20030175290A1
; GENERAL INFORMATION:
;  APPLICANT: Renner, Wolfgang A.
;  APPLICANT:  Bachmann, Martin
;  APPLICANT:  Tissot, Alain
;  APPLICANT:  Maurer, Patrick
;  APPLICANT:  Lechner, Franziska
;  APPLICANT:  Sebbel, Peter
;  APPLICANT:  Piossek, Christine
;  TITLE OF INVENTION: Molecular Antigen Array
;  FILE REFERENCE: 1700.0190004
;  CURRENT APPLICATION NUMBER: US/10/050,902
;  CURRENT FILING DATE:  2002-01-18
;  PRIOR APPLICATION NUMBER: US 60/262,379
;  PRIOR FILING DATE: 2001-01-19
;  PRIOR APPLICATION NUMBER: US 60/288,549
;  PRIOR FILING DATE: 2001-05-04
;  PRIOR APPLICATION NUMBER: US 60/326,998
;  PRIOR FILING DATE: 2001-10-05
;  PRIOR APPLICATION NUMBER: US 60/331,045
;  PRIOR FILING DATE: 2001-11-07
;  NUMBER OF SEQ ID NOS: 350
;  SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 99
;   LENGTH: 183
;   TYPE: PRT
;   ORGANISM: Hepatitis B virus
US-10-050-902-99

  Query Match             100.0%;  Score 793;  DB 14;  Length 183;
  Best Local Similarity   100.0%;  Pred. No. 1.5e-80;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 14
US-10-050-898-99
; Sequence 99, Application US/10050898
; Publication No. US20030175711A1
; GENERAL INFORMATION:
;  APPLICANT: Renner, Wolfgang A.
;  APPLICANT:  Bachmann, Martin
;  APPLICANT:  Tissot, Alain
;  APPLICANT:  Maurer, Patrick
;  APPLICANT:  Lechner, Franziska
;  APPLICANT:  Sebbel, Peter
;  APPLICANT:  Piossek, Christine
;  APPLICANT:  Ortmann, Rainer
;  APPLICANT:  Luond, Rainer
;  APPLICANT:  Staufenbiel, Matthias
;  APPLICANT:  Frey, Peter
;  TITLE OF INVENTION: Molecular Antigen Array
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;  FILE REFERENCE: 1700.0190005
;  CURRENT APPLICATION NUMBER: US/10/050,898
;  CURRENT FILING DATE:  2002-01-18
;  PRIOR APPLICATION NUMBER: US 60/262,379
;  PRIOR FILING DATE: 2001-01-19
;  PRIOR APPLICATION NUMBER: US 60/288,549
;  PRIOR FILING DATE: 2001-05-04
;  PRIOR APPLICATION NUMBER: US 60/326,998
;  PRIOR FILING DATE: 2001-10-05
;  PRIOR APPLICATION NUMBER: US 60/331,045
;  PRIOR FILING DATE: 2001-11-07
;  NUMBER OF SEQ ID NOS: 350
;  SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 99
;   LENGTH: 183
;   TYPE: PRT
;   ORGANISM: Hepatitis B virus
US-10-050-898-99

  Query Match             100.0%;  Score 793;  DB 14;  Length 183;
  Best Local Similarity   100.0%;  Pred. No. 1.5e-80;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 15
US-10-080-299-1
; Sequence 1, Application US/10080299
; Publication No. US20030175863A1
; GENERAL INFORMATION:
;  APPLICANT: Birkett, Ashley J.
;  TITLE OF INVENTION: INFLUENZA IMMUNOGEN AND VACCINE
;  FILE REFERENCE: ICC 127.0 4564/84273
;  CURRENT APPLICATION NUMBER: US/10/080,299
;  CURRENT FILING DATE:  2002-02-21
;  PRIOR APPLICATION NUMBER: 09/930,915
;  PRIOR FILING DATE: 2001-08-15
;  NUMBER OF SEQ ID NOS: 83
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 1
;   LENGTH: 183
;   TYPE: PRT
;   ORGANISM: Hepatitis B virus
US-10-080-299-1

  Query Match             100.0%;  Score 793;  DB 14;  Length 183;
  Best Local Similarity   100.0%;  Pred. No. 1.5e-80;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
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Search completed: April 23, 2004, 16:35:28
Job time : 43 secs

GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: April 23, 2004, 16:26:09 ; Search time 20 Seconds
(without alignments)
716.627 Million cell updates/sec

Title: US-09-931-325C-170_COPY_1_149
Perfect score: 793
Sequence: 1 MDIDPYKEFGATVELLSFLP.....PAYRPPNAPILSTLPETTVV 149

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283366 seqs, 96191526 residues

Total number of hits satisfying chosen parameters: 283366

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_78:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	793	100.0	212	1	NKVLAH	e antigen precurso
2	790	99.6	212	2	S53211	e antigen precurso
3	790	99.6	212	2	S32204	e antigen precurso
4	790	99.6	212	2	S20750	e antigen precurso
5	790	99.6	212	2	S53200	e antigen precurso
6	788	99.4	212	2	S53216	e antigen precurso
7	788	99.4	212	2	S53272	e antigen precurso
8	788	99.4	212	2	S53281	e antigen precurso
9	787	99.2	183	2	S53270	core antigen - hep
10	787	99.2	212	2	S53225	e antigen precurso
11	787	99.2	212	2	S53274	e antigen precurso
12	787	99.2	212	2	S53163	e antigen precurso
13	786	99.1	183	2	S53169	core antigen - hep
14	784	98.9	183	2	S53247	core antigen - hep
15	784	98.9	212	2	S53251	e antigen precurso
16	784	98.9	212	2	S20746	e antigen precurso
17	783	98.7	212	2	S53159	e antigen precurso
18	783	98.7	212	2	S53202	e antigen precurso
19	783	98.7	212	2	S53204	e antigen precurso
20	782	98.6	183	2	S53260	core antigen - hep
21	782	98.6	212	2	S53198	e antigen precurso
22	781	98.5	183	2	S53129	core antigen - hep
23	781	98.5	212	2	S53223	e antigen precurso
24	781	98.5	212	2	S53227	e antigen precurso
25	779	98.2	183	2	S53140	core antigen - hep
26	778	98.1	212	2	S53253	e antigen precurso
27	776	97.9	183	2	S53152	core antigen - hep
28	776	97.9	212	1	NKVLBH	e antigen precurso
29	775	97.7	212	2	S53240	e antigen precurso
30	775	97.7	214	2	S01405	core antigen - hep
31	774	97.6	183	1	NKVLA2	core antigen - hep
32	774	97.6	183	2	S53181	core antigen - hep
33	774	97.6	212	2	S25651	e antigen precurso
34	773	97.5	212	2	S53242	e antigen precurso
35	772	97.4	211	1	NKVLA1	e antigen precurso
36	772	97.4	214	1	NKVLA6	e antigen precurso
37	771	97.2	214	1	NKVLA3	e antigen precurso
38	770	97.1	214	2	S47409	e antigen precurso
39	769	97.0	212	2	S53257	e antigen precurso
40	768	96.8	183	2	S53189	core antigen - hep
41	768	96.8	212	2	S53279	e antigen precurso
42	767	96.7	212	2	S53229	e antigen precurso
43	766	96.6	183	2	S53232	core antigen - hep
44	766	96.6	183	2	S53137	core antigen - hep
45	766	96.6	183	2	S53184	core antigen - hep

ALIGNMENTS

RESULT 1
NKVLAH
e antigen precursor / core antigen - hepatitis B virus (subtype ayw4, isolate hb321 and
N;Alternate names: HBe antigen precursor / HBc antigen; pre-C/C antigen
N;Contains: core antigen; e antigen
C;Species: hepatitis B virus, HBV
A;Variety: subtype ayw4, isolate hb321; isolate patient Ferracuti'83; isolate patient Ca
cheri'83
C;Date: 18-Dec-1981 #sequence_revision 08-Nov-1996 #text_change 16-Jul-1999
C;Accession: S47405; S53191; S53209; S53234; S53264; S53249; S53262; S53277; A03711
R;Pluciennicak, A.
submitted to the EMBL Data Library, August 1994
A;Description: Molecular cloning and sequencing of two complete genomes of polish isolat
A;Reference number: S47404
A;Accession: S47405
A;Molecule type: DNA
A;Residues: 1-212 <PLU>
A;Cross-references: EMBL:Z35716; NID:g527435; PIDN:CAA84786.1; PID:g527437
A;Experimental source: subtype ayw4, isolate hb321
R;Lai, M.E.; Mazzoleni, A.P.; Porru, A.; Balestrieri, A.
submitted to the EMBL Data Library, March 1995
A;Reference number: S53112
A;Accession: S53191
A;Molecule type: DNA
A;Residues: 1-212 <LAI>
A;Cross-references: EMBL:X85283; NID:g736088; PIDN:CAA59593.1; PID:g736090
A;Experimental source: isolate patient Ferracuti'83
A;Accession: S53209
A;Molecule type: DNA
A;Residues: 1-212 <LA2>
A;Cross-references: EMBL:X85290; NID:g736114; PIDN:CAA59609.1; PID:g736116
A;Experimental source: isolate patient Castag'83
A;Accession: S53234
A;Molecule type: DNA
A;Residues: 1-212 <LA3>
A;Cross-references: EMBL:X85300; NID:g736150; PIDN:CAA59631.1; PID:g736152
A;Experimental source: isolate patient Sanna'84
A;Accession: S53264
A;Molecule type: DNA
A;Residues: 1-212 <LA4>
A;Cross-references: EMBL:X85313; NID:g736194; PIDN:CAA59659.1; PID:g736196
A;Experimental source: isolate patient Licheri-1'85
A;Accession: S53249
A;Molecule type: DNA
A;Residues: 1-212 <LA5>
A;Cross-references: EMBL:X85306; NID:g736172; PIDN:CAA59644.1; PID:g736174
A;Experimental source: isolate patient Flore-1'86
A;Accession: S53262
A;Molecule type: DNA
A;Residues: 1-212 <LA6>
A;Cross-references: EMBL:X85312; NID:g736191; PIDN:CAA59657.1; PID:g736193
A;Experimental source: isolate patient Licheri'83

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A;Accession: S53277
A;Molecule type: DNA
A;Residues: 30-212 <LA7>
A;Cross-references: EMBL:X85317; NID:g736211; PIDN:CAA59669.1; PID:g736214
A;Experimental source: patient Giordo-2'86
A;Note: due to a stop codon between the alternative initiators the e antigen precursor c
R;Galibert, F.; Mandart, E.; Fitoussi, F.; Tiollais, P.; Charnay, P.
Nature 281, 646-650, 1979
A;Title: Nucleotide sequence of the hepatitis B virus genome (subtype ayw) in E. coli.
A;Reference number: A93214; MUID:81012091; PMID:399327
A;Accession: A03711
A;Molecule type: DNA
A;Residues: 1-212 <GAL>
A;Cross-references: GB:J02203; NID:g329640; PIDN:AAA45489.1; PID:g329642
A;Experimental source: subtype ayw
C;Genetics:
A;Gene: C
C;Superfamily: hepatitis B virus core antigen
C;Keywords: alternative initiators; core protein
F;1-29/Domain: signal sequence #status predicted <SIG>
F;30-212/Product: core antigen #status predicted <CAG>
F;30-178/Product: e antigen #status predicted <EAG>
F;179-212/Domain: carboxyl-terminal propeptide #link EAG #status predicted <ECP>

  Query Match             100.0%;  Score 793;  DB 1;  Length 212;
  Best Local Similarity   100.0%;  Pred. No. 2.4e-72;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        150 SFGVWIRTPPAYRPPNAPILSTLPETTVV 178


RESULT 2
S53211
e antigen precursor / core antigen - hepatitis B virus (isolate patient Castag-1'85 and
N;Alternate names: HBc antigen; HBe antigen precursor / HBc antigen; pre-C/C antigen
N;Contains: core antigen; e antigen
C;Species: hepatitis B virus, HBV
A;Variety: isolate patient Castag-1'85; isolate patient Ferracuti-1'89
C;Date: 08-Jul-1995 #sequence_revision 03-Aug-1995 #text_change 26-Aug-1999
C;Accession: S53211; S53197
R;Lai, M.E.; Mazzoleni, A.P.; Porru, A.; Balestrieri, A.
submitted to the EMBL Data Library, March 1995
A;Reference number: S53112
A;Accession: S53211
A;Molecule type: DNA
A;Residues: 1-212 <LAI>
A;Cross-references: EMBL:X85291; NID:g736117; PIDN:CAA59611.1; PID:g736119
A;Experimental source: isolate patient Castag-1'85
A;Accession: S53197
A;Molecule type: DNA
A;Residues: 30-212 <LAW>
A;Cross-references: EMBL:X85284; NID:g736095; PIDN:CAA59596.1; PID:g736098
A;Experimental source: isolate patient Ferracuti-1'89
A;Note: due to a stop codon between the alternative initiatiors the e antigen precursor
C;Genetics:
A;Gene: C
C;Superfamily: hepatitis B virus core antigen
C;Keywords: alternative initiators; core protein
F;1-29/Domain: signal sequence #status predicted <SIG>
F;30-212/Product: core antigen #status predicted <CAG>
F;30-178/Product: e antigen #status predicted <EAG>
F;179-212/Domain: carboxyl-terminal propeptide #link EAG #status predicted <ECP>

  Query Match             99.6%;  Score 790;  DB 2;  Length 212;
  Best Local Similarity   99.3%;  Pred. No. 4.9e-72;
  Matches  148;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              |||:||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 CWGDLMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        150 SFGVWIRTPPAYRPPNAPILSTLPETTVV 178


RESULT 3
S32204
e antigen precursor / core antigen - hepatitis B virus (subtype ayw, patients C1000 and
N;Alternate names: HBe antigen precursor / HBc antigen; pre-C/C antigen
N;Contains: core antigen; e antigen
C;Species: hepatitis B virus, HBV
C;Date: 20-Feb-1995 #sequence_revision 20-Feb-1995 #text_change 20-Oct-2000
C;Accession: S32204; S53207
R;Preisler-Adams, S.; Schlayer, M.J.; Peters, T.; Hettler, F.; Gerok, W.; Rasenack, J.
submitted to the EMBL Data Library, March 1993
A;Description: Identification and sequence analysis of hepatitis B virus DNA in immunolc
A;Reference number: S32202
A;Accession: S32204
A;Molecule type: DNA
A;Residues: 1-212 <PRE>
A;Cross-references: EMBL:X72702; NID:g288927; PIDN:CAA51257.1; PID:g288930
A;Experimental source: subtype ayw, patient C1000
R;Lai, M.E.; Mazzoleni, A.P.; Porru, A.; Balestrieri, A.
submitted to the EMBL Data Library, March 1995
A;Reference number: S53112
A;Accession: S53207
A;Molecule type: DNA
A;Residues: 30-212 <LAI>
A;Cross-references: EMBL:X85289; NID:g736110; PIDN:CAA59607.1; PID:g736113
A;Experimental source: isolate patient Castaa-2'87
A;Note: due to a stop codon mutation between the alternative initiatiors the e antigen p
C;Genetics:
A;Gene: C
C;Superfamily: hepatitis B virus core antigen
C;Keywords: alternative initiators; core protein
F;1-29/Domain: signal sequence #status predicted <SIG>
F;30-212/Product: core antigen #status predicted <CAG>
F;30-178/Product: e antigen #status predicted <EAG>
F;179-212/Domain: carboxyl-terminal propeptide #link EAG #status predicted <ECP>

  Query Match             99.6%;  Score 790;  DB 2;  Length 212;
  Best Local Similarity   99.3%;  Pred. No. 4.9e-72;
  Matches  148;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||:||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYRDALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        150 SFGVWIRTPPAYRPPNAPILSTLPETTVV 178


RESULT 4
S20750
e antigen precursor / core antigen - hepatitis B virus (subtype ayw, patient CI)
N;Alternate names: HBe antigen precursor / HBc antigen; pre-C/C antigen
```

```
N;Contains: core antigen; e antigen
C;Species: hepatitis B virus, HBV
A;Variety: subtype ayw, patient CI
C;Date: 20-Feb-1995 #sequence_revision 20-Feb-1995 #text_change 26-Aug-1999
C;Accession: S20750
R;Lai, M.E.; Mazzoleni, A.P.; Balestrieri, A.; Melis, A.; Porru, A.
submitted to the EMBL Data Library, March 1992
A;Description: Sequence analysis of HBV genomes isolated from patients with HBsAg negati
A;Reference number: S20745
A;Accession: S20750
A;Molecule type: DNA
A;Residues: 1-212 <LAI>
A;Cross-references: EMBL:X65258; NID:g59434; PIDN:CAA46354.1; PID:g59436
A;Experimental source: subtype ayw, patient CI
C;Genetics:
A;Gene: C
C;Superfamily: hepatitis B virus core antigen
C;Keywords: alternative initiators; core protein
F;1-29/Domain: signal sequence #status predicted <SIG>
F;30-212/Product: core antigen #status predicted <CAG>
F;30-178/Product: e antigen #status predicted <EAG>
F;179-212/Domain: carboxyl-terminal propeptide #link EAG #status predicted <ECP>

  Query Match             99.6%;  Score 790;  DB 2;  Length 212;
  Best Local Similarity   99.3%;  Pred. No. 4.9e-72;
  Matches  148;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              :|||||||||||||||||||||||||||||
Db        150 AFGVWIRTPPAYRPPNAPILSTLPETTVV 178


RESULT 5
S53200
e antigen precursor / core antigen - hepatitis B virus (isolate patient Ferracuti-3'91)
N;Alternate names: HBe antigen precursor / HBc antigen; pre-C/C antigen
N;Contains: core antigen; e antigen
C;Species: hepatitis B virus, HBV
A;Variety: isolate patient Ferracuti-3'91
C;Date: 08-Jul-1995 #sequence_revision 03-Aug-1995 #text_change 26-Aug-1999
C;Accession: S53200
R;Lai, M.E.; Mazzoleni, A.P.; Porru, A.; Balestrieri, A.
submitted to the EMBL Data Library, March 1995
A;Reference number: S53112
A;Accession: S53200
A;Molecule type: DNA
A;Residues: 1-212 <LAI>
A;Cross-references: EMBL:X85286; NID:g736101; PIDN:CAA59600.1; PID:g736103
A;Experimental source: isolate patient Ferracuti-3'91
C;Genetics:
A;Gene: C
C;Superfamily: hepatitis B virus core antigen
C;Keywords: alternative initiators; core protein
F;1-29/Domain: signal sequence #status predicted <SIG>
F;30-212/Product: core antigen #status predicted <CAG>
F;30-178/Product: e antigen #status predicted <EAG>
F;179-212/Domain: carboxyl-terminal propeptide #link EAG #status predicted <ECP>

  Query Match             99.6%;  Score 790;  DB 2;  Length 212;
  Best Local Similarity   99.3%;  Pred. No. 4.9e-72;
  Matches  148;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||:|||||||||||||||||||
Db        150 SFGVWIRTPPAYKPPNAPILSTLPETTVV 178


RESULT 6
S53216
e antigen precursor / core antigen - hepatitis B virus (isolate patient Castag'3)
N;Alternate names: HBe antigen precursor / HBc antigen; pre-C/C antigen
N;Contains: core antigen; e antigen
C;Species: hepatitis B virus, HBV
A;Variety: isolate patient Castag'3
C;Date: 08-Jul-1995 #sequence_revision 03-Aug-1995 #text_change 26-Aug-1999
C;Accession: S53216
R;Lai, M.E.; Mazzoleni, A.P.; Porru, A.; Balestrieri, A.
submitted to the EMBL Data Library, March 1995
A;Reference number: S53112
A;Accession: S53216
A;Molecule type: DNA
A;Residues: 1-212 <LAI>
A;Cross-references: EMBL:X85293; NID:g736124; PIDN:CAA59616.1; PID:g736126
A;Experimental source: isolate patient Castag'3
C;Genetics:
A;Gene: C
C;Superfamily: hepatitis B virus core antigen
C;Keywords: alternative initiators; core protein
F;1-29/Domain: signal sequence #status predicted <SIG>
F;30-212/Product: core antigen #status predicted <CAG>
F;30-178/Product: e antigen #status predicted <EAG>
F;179-212/Domain: carboxyl-terminal propeptide #link EAG #status predicted <ECP>

  Query Match             99.4%;  Score 788;  DB 2;  Length 212;
  Best Local Similarity   99.3%;  Pred. No. 7.7e-72;
  Matches  148;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              |||||||||||||||||||||||||||||||| ||||||||||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDNASALYREALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              ||||||||||||||||||||||||||||||
Db        150 SFGVWIRTPPAYRPPNAPILSTLPETTVV 178


RESULT 7
S53272
e antigen precursor / core antigen - hepatitis B virus (isolate patient Licheri-3'90)
N;Alternate names: HBe antigen precursor / HBc antigen; pre-C/C antigen
N;Contains: core antigen; e antigen
C;Species: hepatitis B virus, HBV
A;Variety: isolate patient Licheri-3'90
C;Date: 08-Jul-1995 #sequence_revision 03-Aug-1995 #text_change 26-Aug-1999
C;Accession: S53272
R;Lai, M.E.; Mazzoleni, A.P.; Porru, A.; Balestrieri, A.
submitted to the EMBL Data Library, March 1995
A;Reference number: S53112
A;Accession: S53272
A;Molecule type: DNA
A;Residues: 1-212 <LAI>
A;Cross-references: EMBL:X85315; NID:g736205; PIDN:CAA59664.1; PID:g736207
A;Experimental source: isolate patient Licheri-3'90
C;Genetics:
A;Gene: C
C;Superfamily: hepatitis B virus core antigen
```

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C;Keywords: alternative initiators; core protein
F;1-29/Domain: signal sequence #status predicted <SIG>
F;30-212/Product: core antigen #status predicted <CAG>
F;30-178/Product: e antigen #status predicted <EAG>
F;179-212/Domain: carboxyl-terminal propeptide #link EAG #status predicted <ECP>

  Query Match             99.4%;  Score 788;  DB 2;  Length 212;
  Best Local Similarity   99.3%;  Pred. No. 7.7e-72;
  Matches  148;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              |||||||||||||||||||||||||||||||||||||||||| ||||||||||||||||
Db         90 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHICCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        150 SFGVWIRTPPAYRPPNAPILSTLPETTVV 178


RESULT 8
S53281
e antigen precursor / core antigen - hepatitis B virus (isolate patient Galistru-1'86)
N;Alternate names: HBe antigen precursor / HBc antigen; pre-C/C antigen
N;Contains: core antigen; e antigen
C;Species: hepatitis B virus, HBV
A;Variety: isolate patient Galistru-1'86
C;Date: 08-Jul-1995 #sequence_revision 03-Aug-1995 #text_change 26-Aug-1999
C;Accession: S53281
R;Lai, M.E.; Mazzoleni, A.P.; Porru, A.; Balestrieri, A.
submitted to the EMBL Data Library, March 1995
A;Reference number: S53112
A;Accession: S53281
A;Molecule type: DNA
A;Residues: 1-212 <LAI>
A;Cross-references: EMBL:X85319; NID:g736218; PIDN:CAA59673.1; PID:g736220
A;Experimental source: isolate patient Galistru-1'86
C;Genetics:
A;Gene: C
C;Superfamily: hepatitis B virus core antigen
C;Keywords: alternative initiators; core protein
F;1-29/Domain: signal sequence #status predicted <SIG>
F;30-212/Product: core antigen #status predicted <CAG>
F;30-178/Product: e antigen #status predicted <EAG>
F;179-212/Domain: carboxyl-terminal propeptide #link EAG #status predicted <ECP>

  Query Match             99.4%;  Score 788;  DB 2;  Length 212;
  Best Local Similarity   99.3%;  Pred. No. 7.7e-72;
  Matches  148;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||| ||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQRIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        150 SFGVWIRTPPAYRPPNAPILSTLPETTVV 178


RESULT 9
S53270
core antigen - hepatitis B virus (isolate patient Licheri-2'87)
N;Alternate names: HBc antigen
N;Contains: core antigen
C;Species: hepatitis B virus, HBV
A;Variety: isolate patient Licheri-2'87
C;Date: 08-Jul-1995 #sequence_revision 03-Aug-1995 #text_change 26-Aug-1999
C;Accession: S53270
R;Lai, M.E.; Mazzoleni, A.P.; Porru, A.; Balestrieri, A.
submitted to the EMBL Data Library, March 1995
A;Reference number: S53112
A;Accession: S53270
A;Molecule type: DNA
A;Residues: 1-183 <LAI>
A;Cross-references: EMBL:X85314; NID:g736201; PIDN:CAA59662.1; PID:g736204
A;Experimental source: isolate patient Licheri-2'87
A;Note: due to a stop codon between the alternative initiators the e antigen precursor
C;Genetics:
A;Gene: C
C;Superfamily: hepatitis B virus core antigen
C;Keywords: core protein

  Query Match             99.2%;  Score 787;  DB 2;  Length 183;
  Best Local Similarity   98.7%;  Pred. No. 8.2e-72;
  Matches  147;  Conservative    2;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              |||||||||||||||||||||||||||||||||||||||:||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYRDALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              |||:||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGDLMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 10
S53225
e antigen precursor / core antigen - hepatitis B virus (isolate patient Chighine-2'86)
N;Alternate names: HBe antigen precursor / HBc antigen; pre-C/C antigen
N;Contains: core antigen; e antigen
C;Species: hepatitis B virus, HBV
A;Variety: isolate patient Chighine-2'86
C;Date: 08-Jul-1995 #sequence_revision 03-Aug-1995 #text_change 26-Aug-1999
C;Accession: S53225
R;Lai, M.E.; Mazzoleni, A.P.; Porru, A.; Balestrieri, A.
submitted to the EMBL Data Library, March 1995
A;Reference number: S53112
A;Accession: S53225
A;Molecule type: DNA
A;Residues: 1-212 <LAI>
A;Cross-references: EMBL:X85296; NID:g736137; PIDN:CAA59622.1; PID:g736139
A;Experimental source: isolate patient Chighine-2'86
C;Genetics:
A;Gene: C
C;Superfamily: hepatitis B virus core antigen
C;Keywords: alternative initiators; core protein
F;1-29/Domain: signal sequence #status predicted <SIG>
F;30-212/Product: core antigen #status predicted <CAG>
F;30-178/Product: e antigen #status predicted <EAG>
F;179-212/Domain: carboxyl-terminal propeptide #link EAG #status predicted <ECP>

  Query Match             99.2%;  Score 787;  DB 2;  Length 212;
  Best Local Similarity   98.7%;  Pred. No. 9.8e-72;
  Matches  147;  Conservative    2;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              |||:||||||||||||||||||||||||||||||||||:||||||||||||||||||||
Db         90 CWGDLMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFKQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
```

```
Db        150 SFGVWIRTPPAYRPPNAPILSTLPETTVV 178


RESULT 11
S53274
e antigen precursor / core antigen - hepatitis B virus (isolate patient Giordo'84)
N;Alternate names: HBe antigen precursor / HBc antigen; pre-C/C antigen
N;Contains: core antigen; e antigen
C;Species: hepatitis B virus, HBV
A;Variety: isolate patient Giordo'84
C;Date: 08-Jul-1995 #sequence_revision 03-Aug-1995 #text_change 26-Aug-1999
C;Accession: S53274
R;Lai, M.E.; Mazzoleni, A.P.; Porru, A.; Balestrieri, A.
submitted to the EMBL Data Library, March 1995
A;Reference number: S53112
A;Accession: S53274
A;Molecule type: DNA
A;Residues: 1-212 <LAI>
A;Cross-references: EMBL:X85316; NID:g736208; PIDN:CAA59666.1; PID:g736210
A;Experimental source: isolate patient patient Giordo'84
C;Genetics:
A;Gene: C
C;Superfamily: hepatitis B virus core antigen
C;Keywords: alternative initiators; core protein
F;1-29/Domain: signal sequence #status predicted <SIG>
F;30-212/Product: core antigen #status predicted <CAG>
F;30-178/Product: e antigen #status predicted <EAG>
F;179-212/Domain: carboxyl-terminal propeptide #link EAG #status predicted <ECP>

  Query Match            99.2%;  Score 787;  DB 2;  Length 212;
  Best Local Similarity  99.3%;  Pred. No. 9.8e-72;
  Matches  148;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||| ||||||||
Db        150 SFGVWIRTPPAYRPPNAPILLTLPETTVV 178


RESULT 12
S53163
e antigen precursor / core antigen - hepatitis B virus (isolate patient Vittorina'92)
N;Alternate names: HBe antigen precursor / HBc antigen; pre-C/C antigen
N;Contains: core antigen; e antigen
C;Species: hepatitis B virus, HBV
A;Variety: isolate patient Vittorina'92
C;Date: 08-Jul-1995 #sequence_revision 03-Aug-1995 #text_change 26-Aug-1999
C;Accession: S53163
R;Lai, M.E.; Mazzoleni, A.P.; Porru, A.; Balestrieri, A.
submitted to the EMBL Data Library, March 1995
A;Reference number: S53112
A;Accession: S53163
A;Molecule type: DNA
A;Residues: 1-212 <LAI>
A;Cross-references: EMBL:X85256; NID:g736050; PIDN:CAA59519.1; PID:g736052
A;Experimental source: isolate patient Vittorina'92
C;Genetics:
A;Gene: C
C;Superfamily: hepatitis B virus core antigen
C;Keywords: alternative initiators; core protein
F;1-29/Domain: signal sequence #status predicted <SIG>
F;30-212/Product: core antigen #status predicted <CAG>
F;30-178/Product: e antigen #status predicted <EAG>
F;179-212/Domain: carboxyl-terminal propeptide #link EAG #status predicted <ECP>

  Query Match            99.2%;  Score 787;  DB 2;  Length 212;
  Best Local Similarity  99.3%;  Pred. No. 9.8e-72;
  Matches  148;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLSTASALYREALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||| ||||||||
Db        150 SFGVWIRTPPAYRPPNAPILSTLPETTVV 178


RESULT 13
S53169
core antigen - hepatitis B virus (isolate patient Muresu'89)
N;Alternate names: HBc antigen
N;Contains: core antigen
C;Species: hepatitis B virus, HBV
A;Variety: isolate patient Muresu'89
C;Date: 08-Jul-1995 #sequence_revision 03-Aug-1995 #text_change 26-Aug-1999
C;Accession: S53169
R;Lai, M.E.; Mazzoleni, A.P.; Porru, A.; Balestrieri, A.
submitted to the EMBL Data Library, March 1995
A;Reference number: S53112
A;Accession: S53169
A;Molecule type: DNA
A;Residues: 1-183 <LAI>
A;Cross-references: EMBL:X85275; NID:g736057; PIDN:CAA59571.1; PID:g736060
A;Experimental source: isolate patient Muresu'89
A;Note: due to a stop codon between the alternative initiatiors the e antigen precursor
C;Genetics:
A;Gene: C
C;Superfamily: hepatitis B virus core antigen
C;Keywords: core protein

  Query Match            99.1%;  Score 786;  DB 2;  Length 183;
  Best Local Similarity  98.7%;  Pred. No. 1e-71;
  Matches  147;  Conservative    1;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||:|||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYRDALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              |||||||||||||| ||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGANLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||| ||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 14
S53247
core antigen - hepatitis B virus (isolate patient Flore-2'91)
N;Alternate names: HBc antigen
N;Contains: core antigen
C;Species: hepatitis B virus, HBV
A;Variety: isolate patient patient Flore-2'91
C;Date: 08-Jul-1995 #sequence_revision 03-Aug-1995 #text_change 26-Aug-1999
C;Accession: S53247
R;Lai, M.E.; Mazzoleni, A.P.; Porru, A.; Balestrieri, A.
submitted to the EMBL Data Library, March 1995
A;Reference number: S53112
A;Accession: S53247
A;Molecule type: DNA
A;Residues: 1-183 <LAI>
A;Cross-references: EMBL:X85305; NID:g736168; PIDN:CAA59642.1; PID:g736171
A;Experimental source: isolate patient patient Flore-2'91
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A;Note: due to a stop codon between the alternative initiatiors the e antigen precursor
C;Genetics:
A;Gene: C
C;Superfamily: hepatitis B virus core antigen
C;Keywords: core protein

  Query Match             98.9%;  Score 784;  DB 2;  Length 183;
  Best Local Similarity   98.7%;  Pred. No. 1.6e-71;
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Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              |||||||||||||||||||||:||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPTDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||| ||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETCVV 149


RESULT 15
S53251
e antigen precursor / core antigen - hepatitis B virus (isolate patient Flore'85)
N;Alternate names: HBe antigen precursor / HBc antigen; pre-C/C antigen
N;Contains: core antigen; e antigen
C;Species: hepatitis B virus, HBV
A;Variety: isolate patient Flore'85
C;Date: 08-Jul-1995 #sequence_revision 03-Aug-1995 #text_change 26-Aug-1999
C;Accession: S53251
R;Lai, M.E.; Mazzoleni, A.P.; Porru, A.; Balestrieri, A.
submitted to the EMBL Data Library, March 1995
A;Reference number: S53112
A;Accession: S53251
A;Molecule type: DNA
A;Residues: 1-212 <LAI>
A;Cross-references: EMBL:X85307; NID:g736175; PIDN:CAA59646.1; PID:g736177
A;Experimental source: isolate patient Flore'85
C;Genetics:
A;Gene: C
C;Superfamily: hepatitis B virus core antigen
C;Keywords: alternative initiators; core protein
F;1-29/Domain: signal sequence #status predicted <SIG>
F;30-212/Product: core antigen #status predicted <CAG>
F;30-178/Product: e antigen #status predicted <EAG>
F;179-212/Domain: carboxyl-terminal propeptide #link EAG #status predicted <ECP>

  Query Match             98.9%;  Score 784;  DB 2;  Length 212;
  Best Local Similarity   98.7%;  Pred. No. 2e-71;
  Matches  147;  Conservative    1;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              |||:| ||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 CWGDLTTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        150 SFGVWIRTPPAYRPPNAPILSTLPETTVV 178


Search completed: April 23, 2004, 16:30:16
Job time : 26 secs
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GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: April 23, 2004, 16:22:09 ; Search time 18 Seconds
(without alignments)
431.025 Million cell updates/sec

Title: US-09-931-325C-170_COPY_1_149
Perfect score: 793
Sequence: 1 MDIDPYKEFGATVELLSFLP.....PAYRPPNAPILSTLPETTVV 149

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 141681 seqs, 52070155 residues

Total number of hits satisfying chosen parameters: 141681

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SwissProt_42:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	793	100.0	183	1	CORA_HPBVY	P03146 hepatitis b
2	774	97.6	183	1	CORA_HPBVZ	P03147 hepatitis b
3	772	97.4	185	1	CORA_HPBVW	P03149 hepatitis b
4	772	97.4	211	1	CORA_HPBVA	P24023 hepatitis b
5	771	97.2	185	1	CORA_HPBV2	P03148 hepatitis b
6	761	96.0	183	1	CORA_HPBVJ	P17391 hepatitis b
7	761	96.0	183	1	CORA_HPBVO	P17392 hepatitis b
8	760	95.8	183	1	CORA_HPBV4	P03150 hepatitis b
9	756	95.3	214	1	CORA_HPBV9	P17099 hepatitis b
10	754	95.1	183	1	CORA_HPBVL	P12901 hepatitis b
11	751	94.7	212	1	CORA_HPBVT	Q05495 hepatitis b
12	749	94.5	195	1	CORA_HPBVF	P29178 hepatitis b
13	538	67.8	188	1	CORA_WHV1	P03152 woodchuck h
14	534.5	67.4	217	1	CORA_HPBGS	P03153 ground squi
15	529	66.7	187	1	CORA_WHV8	P06433 woodchuck h
16	132	16.6	305	1	CORA_HPBHE	P13845 heron hepat
17	112	14.1	305	1	CORA_HPBDB	P17190 duck hepati
18	112	14.1	305	1	CORA_HPBDC	P30027 duck hepati
19	112	14.1	305	1	CORA_HPBDW	P17191 duck hepati
20	110	13.9	305	1	CORA_HPBDU	P03154 duck hepati
21	85	10.7	306	1	RM45_MOUSE	Q9d0q7 mus musculu
22	79.5	10.0	3695	1	LMA5_HUMAN	O15230 homo sapien
23	78	9.8	802	1	BCB2_ACEXY	O82860 acetobacter
24	76.5	9.6	1226	1	YE41_METJA	Q58836 methanococc
25	75.5	9.5	3148	1	HD_FUGRU	P51112 fugu rubrip
26	75	9.5	784	1	DPO2_AERPE	O93746 aeropyrum p
27	74	9.3	540	1	HXTD_YEAST	P42833 saccharomyc
28	73.5	9.3	3587	1	SRF2_BACSU	Q04747 bacillus su
29	73	9.2	1657	1	IQG1_HUMAN	P46940 homo sapien
30	72.5	9.1	306	1	RM45_HUMAN	Q9brj2 homo sapien
31	72.5	9.1	2415	1	SPCA_MOUSE	P08032 mus musculu
32	72	9.1	377	1	YIL0_YEAST	P40481 saccharomyc
33	72	9.1	455	1	HSLU_XANAC	Q8ppp7 xanthomonas
34	71	9.0	349	1	NADA_MYCTU	O06596 mycobacteri
35	71	9.0	400	1	YV6L_CAEEL	Q19978 caenorhabdi
36	71	9.0	496	1	C72D_ARATH	P58050 arabidopsis
37	70.5	8.9	931	1	TRP6_HUMAN	Q9y210 homo sapien
38	70	8.8	673	1	LOX5_HUMAN	P09917 homo sapien
39	70	8.8	773	1	CDH_PHACH	Q01738 phanerochae
40	70	8.8	1874	1	POLR_KYMVJ	P36304 kennedya ye
41	69	8.7	331	1	YOO1_CAEEL	P34633 caenorhabdi
42	68.5	8.6	740	1	PAB1_ANASP	P58565 anabaena sp
43	67.5	8.5	205	1	UREG_ECOLI	Q03287 escherichia
44	67.5	8.5	205	1	UREG_PROMI	Q06206 proteus mir
45	67.5	8.5	510	1	Y382_RICPR	Q9zde9 rickettsia

ALIGNMENTS

```
RESULT 1
CORA_HPBVY
ID   CORA_HPBVY     STANDARD;      PRT;   183 AA.
AC   P03146;
DT   21-JUL-1986 (Rel. 01, Created)
DT   21-JUL-1986 (Rel. 01, Last sequence update)
DT   28-FEB-2003 (Rel. 41, Last annotation update)
DE   Core antigen.
GN   C.
OS   Hepatitis B virus (subtype ayw).
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10418;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=81012091; PubMed=399327;
RA   Galibert F., Mandart E., Fitoussi F., Tiollais P., Charnay P.;
RT   "Nucleotide sequence of the hepatitis B virus genome (subtype ayw)
RT   cloned in E. coli.";
RL   Nature 281:646-650(1979).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   STRAIN=Latvia;
RX   MEDLINE=85204397; PubMed=3996597;
RA   Bichko V., Pushko P., Dreilina D., Pumpen P., Gren E.;
RT   "Subtype ayw variant of hepatitis B virus. DNA primary structure
RT   analysis.";
RL   FEBS Lett. 185:208-212(1985).
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; V01460; CAA24706.1; ALT_INIT.
DR   EMBL; X02496; -; NOT_ANNOTATED_CDS.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
KW   Core protein; Repeat.
FT   REPEAT      162    169
FT   REPEAT      170    177
FT   VARIANT      33     33       T -> N (IN STRAIN LATVIA).
FT   VARIANT      80     80       A -> I (IN STRAIN LATVIA).
SQ   SEQUENCE   183 AA;  21116 MW;  E0D9D9763F24E958 CRC64;

  Query Match          100.0%;  Score 793;  DB 1;  Length 183;
  Best Local Similarity  100.0%;  Pred. No. 1.8e-72;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
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                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy         121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
                ||||||||||||||||||||||||||||||
Db         121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 2
CORA_HPBVZ
ID   CORA_HPBVZ     STANDARD;      PRT;   183 AA.
AC   P03147;
DT   21-JUL-1986 (Rel. 01, Created)
DT   21-JUL-1986 (Rel. 01, Last sequence update)
DT   01-OCT-1989 (Rel. 12, Last annotation update)
DE   Core antigen.
GN   C.
OS   Hepatitis B virus (subtype adyw).
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10419;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=81012115; PubMed=399329;
RA   Pasek M., Goto T., Gilbert W., Zink B., Schaller H., McKay P.,
RA   Leadbetter G., Murray K.;
RT   "Hepatitis B virus genes and their expression in E. coli.";
RL   Nature 282:575-579(1979).
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; J02202; AAA45486.1; -.
DR   EMBL; A08967; CAA00816.1; -.
DR   PIR; B93217; NKVLA2.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
KW   Core protein; Repeat.
FT   REPEAT      162    169
FT   REPEAT      170    177
SQ   SEQUENCE   183 AA;  21042 MW;  545ED0E55527F26C CRC64;

  Query Match             97.6%;  Score 774;  DB 1;  Length 183;
  Best Local Similarity   96.0%;  Pred. No. 1.5e-70;
  Matches  143;  Conservative    5;  Mismatches    1;  Indels    0;  Gaps    0;

Qy           1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
               |||||||||||||||||||||||||||||||||||||:||||:||||||||||||||||||||
Db           1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTAAALYRDALESPEHCSPHHTALRQAIL 60

Qy          61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
               |||:|||||||||| ||||||||||||||||||:|||||||||||||||||||||||:||||
Db          61 CWGDLMTLATWVGTNLEDPASRDLVVSYVNTNVGLKFRQLLWFHISCLTFGRETVLEYLV 120

Qy         121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
               ||||||||||||||||||||||||||||||
Db         121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 3
CORA_HPBVW
ID   CORA_HPBVW     STANDARD;      PRT;   185 AA.
AC   P03149;
DT   21-JUL-1986 (Rel. 01, Created)
DT   21-JUL-1986 (Rel. 01, Last sequence update)
DT   01-OCT-1989 (Rel. 12, Last annotation update)
DE   Core antigen.
GN   C.
OS   Hepatitis B virus (subtype adw).
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=106821;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=83168919; PubMed=6300776;
RA   Ono Y., Onda H., Sasada R., Igarashi K., Sugino Y., Nishioka K.;
RT   "The complete nucleotide sequences of the cloned hepatitis B virus
RT   DNA; subtype adr and adw.";
RL   Nucleic Acids Res. 11:1747-1757(1983).
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CC   ---------------------------------------------------------------------
DR   EMBL; V00866; -; NOT_ANNOTATED_CDS.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
KW   Core protein; Repeat.
FT   REPEAT      164    171
FT   REPEAT      172    179
SQ   SEQUENCE   185 AA;  21394 MW;  B86A90D541BA70F9 CRC64;

  Query Match             97.4%;  Score 772;  DB 1;  Length 185;
  Best Local Similarity   96.6%;  Pred. No. 2.3e-70;
  Matches  144;  Conservative    3;  Mismatches    2;  Indels    0;  Gaps    0;

Qy           1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
               |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db           1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy          61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
               |||||||||||||| ||:|||||||||:||||||| ||||||||||||||||:||||
Db          61 CWGELMTLATWVGNNLQDPASRDLVVNYVNTNMGLKIRQLLWFHISCLTFGRETVLEYLV 120

Qy         121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
               ||||||||||||||||||||||||||||||
Db         121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 4
CORA_HPBVA
ID   CORA_HPBVA     STANDARD;      PRT;   211 AA.
AC   P24023;
DT   01-MAR-1992 (Rel. 21, Created)
DT   01-MAR-1992 (Rel. 21, Last sequence update)
DT   16-OCT-2001 (Rel. 40, Last annotation update)
DE   Core antigen.
GN   C.
OS   Hepatitis B virus (strain alpha1).
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10411;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=90266476; PubMed=2345966;
RA   Tong S., Li J., Vitvitski L., Trepo C.;
RT   "Active hepatitis B virus replication in the presence of anti-HBe is
RT   associated with viral variants containing an inactive pre-C region.";
RL   Virology 176:596-603(1990).
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CC   ---------------------------------------------------------------------
DR   EMBL; M32138; -; NOT_ANNOTATED_CDS.
DR   PIR; A34773; NKVLA1.
```

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DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
KW   Core protein; Repeat.
FT   REPEAT      183    190
FT   REPEAT      198    206
SQ   SEQUENCE   211 AA;  24208 MW;  B774AC72E65C75AB CRC64;

  Query Match             97.4%;  Score 772;  DB 1;  Length 211;
  Best Local Similarity   96.6%;  Pred. No. 2.7e-70;
  Matches  144;  Conservative    3;  Mismatches    2;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         29 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 88

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              |||:|:||:|||| ||||| ||||||||||||||||||||||||||||||||||||||||
Db         89 CWGDLITLSTWVGGNLEDPTSRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 148

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        149 SFGVWIRTPPAYRPPNAPILSTLPETTVV 177


RESULT 5
CORA_HPBV2
ID   CORA_HPBV2     STANDARD;      PRT;   185 AA.
AC   P03148;
DT   21-JUL-1986 (Rel. 01, Created)
DT   01-AUG-1992 (Rel. 23, Last sequence update)
DT   15-DEC-1998 (Rel. 37, Last annotation update)
DE   Core antigen.
GN   C.
OS   Hepatitis B virus (subtype adw2).
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10408;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Valenzuela P., Quiroga M., Zaldivar J., Gray P., Rutter W.J.;
RL   (In) Field B.N., Jaenisch R., Fox C.F. (eds.);
RL   Animal virus genetics, pp.57-70, Academic Press, New York (1980).
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
KW   Core protein; Repeat.
FT   REPEAT      164    171
FT   REPEAT      172    179
SQ   SEQUENCE   185 AA;  21304 MW;  31F4DC338B507E19 CRC64;

  Query Match             97.2%;  Score 771;  DB 1;  Length 185;
  Best Local Similarity   96.6%;  Pred. No. 2.9e-70;
  Matches  144;  Conservative    3;  Mismatches    2;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              |||||||||||||| |||||||||||:|||||:||| ||||||||||||||||:||||
Db         61 CWGELMTLATWVGNNLEDPASRDLVVNYVNTNVGLKIRQLLWFHISCLTFGRETVLEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 6
CORA_HPBVJ
ID   CORA_HPBVJ     STANDARD;      PRT;   183 AA.
AC   P17391;
DT   01-AUG-1990 (Rel. 15, Created)
DT   01-AUG-1990 (Rel. 15, Last sequence update)
DT   01-FEB-1991 (Rel. 17, Last annotation update)
DE   Core antigen.
OS   Hepatitis B virus (subtype adw / strain Japan/pJDW233).
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10413;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=89010694; PubMed=3171552;
RA   Okamoto H., Tsuda F., Sakugawa H., Sastrosoewignjo R.I., Imai M.,
RA   Miyakawa Y., Mayumi M.;
RT   "Typing hepatitis B virus by homology in nucleotide sequence:
RT   comparison of surface antigen subtypes.";
RL   J. Gen. Virol. 69:2575-2583(1988).
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CC   ---------------------------------------------------------------------
DR   EMBL; D00329; -; NOT_ANNOTATED_CDS.
DR   PIR; A28925; NKVLJ1.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
KW   Core protein; Repeat.
FT   REPEAT      162    169
FT   REPEAT      170    177
SQ   SEQUENCE   183 AA;  21224 MW;  9FDD6B5F5AF5E160 CRC64;

  Query Match             96.0%;  Score 761;  DB 1;  Length 183;
  Best Local Similarity   95.3%;  Pred. No. 2.9e-69;
  Matches  142;  Conservative    3;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              |||||||||||||||||||||||||||||||| ||||||||:||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTVSALYREALKSPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              |||||||||||| ||||||||||:||||||| ||| ||||||||||||:||||
Db         61 CWGELMTLATWVGNNLEDPASRDLVVNYVNTNMGLKIRQLWWFHISCLTFGRETVLEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 7
CORA_HPBVO
ID   CORA_HPBVO     STANDARD;      PRT;   183 AA.
AC   P17392;
DT   01-AUG-1990 (Rel. 15, Created)
DT   01-AUG-1990 (Rel. 15, Last sequence update)
DT   01-FEB-1991 (Rel. 17, Last annotation update)
DE   Core antigen.
OS   Hepatitis B virus (subtype adw / strain Okinawa/pODW282).
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10415;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=89010694; PubMed=3171552;
RA   Okamoto H., Tsuda F., Sakugawa H., Sastrosoewignjo R.I., Imai M.,
RA   Miyakawa Y., Mayumi M.;
RT   "Typing hepatitis B virus by homology in nucleotide sequence:
RT   comparison of surface antigen subtypes.";
RL   J. Gen. Virol. 69:2575-2583(1988).
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CC   ----------------------------------------------------------------------
DR   EMBL; D00330; -; NOT_ANNOTATED_CDS.
DR   PIR; B28925; NKVLJ2.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
KW   Core protein; Repeat.
FT   REPEAT       162    169
FT   REPEAT       170    177
SQ   SEQUENCE   183 AA;  21081 MW;  66BDB26331122930C CRC64;

  Query Match             96.0%;  Score 761;  DB 1;  Length 183;
  Best Local Similarity   95.3%;  Pred. No. 2.9e-69;
  Matches  142;  Conservative    3;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              |||||||||||:||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGASVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              |||||| |||||| |||||||||:||||||| ||||| ||||||||||||||||:||||
Db         61 CWGELMNLATWVGSNLEDPASRELVVSYVNVNMGLKIRQLLWFHISCLTFGRETVLEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 8
CORA_HPBV4
ID   CORA_HPBV4     STANDARD;      PRT;   183 AA.
AC   P03150; P03151;
DT   21-JUL-1986 (Rel. 01, Created)
DT   21-JUL-1986 (Rel. 01, Last sequence update)
DT   01-FEB-1991 (Rel. 17, Last annotation update)
DE   Core antigen.
GN   C.
OS   Hepatitis B virus (subtype adr4),
OS   Hepatitis B virus (subtype adr), and
OS   Hepatitis B virus (subtype adw / strain Indonesia/pIDW420).
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10409, 106820, 10412;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=ADR;
RX   MEDLINE=83168919; PubMed=6300776;
RA   Ono Y., Onda H., Sasada R., Igarashi K., Sugino Y., Nishioka K.;
RT   "The complete nucleotide sequences of the cloned hepatitis B virus
RT   DNA; subtype adr and adw.";
RL   Nucleic Acids Res. 11:1747-1757(1983).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   STRAIN=ADR4;
RX   MEDLINE=83246570; PubMed=6306594;
RA   Fujiyama A., Miyanohara A., Nozaki C., Yoneyama T., Ohtomo N.,
RA   Matsubara K.;
RT   "Cloning and structural analyses of hepatitis B virus DNAs, subtype
RT   adr.";
RL   Nucleic Acids Res. 11:4601-4610(1983).
RN   [3]
RP   SEQUENCE FROM N.A.
RC   STRAIN=ADW;
RX   MEDLINE=89010694; PubMed=3171552;
RA   Okamoto H., Tsuda F., Sakugawa H., Sastrosoewignjo R.I., Imai M.,
RA   Miyakawa Y., Mayumi M.;
RT   "Typing hepatitis B virus by homology in nucleotide sequence:
RT   comparison of surface antigen subtypes.";
RL   J. Gen. Virol. 69:2575-2583(1988).
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CC   ----------------------------------------------------------------------
DR   EMBL; V00867; -; NOT_ANNOTATED_CDS.
DR   EMBL; X01587; CAA25745.1; -.
DR   EMBL; D00331; -; NOT_ANNOTATED_CDS.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
KW   Core protein; Repeat.
FT   REPEAT       162    169
FT   REPEAT       170    177
SQ   SEQUENCE   183 AA;  21095 MW;  ED2DA1DB07FB596D CRC64;

  Query Match             95.8%;  Score 760;  DB 1;  Length 183;
  Best Local Similarity   94.6%;  Pred. No. 3.7e-69;
  Matches  141;  Conservative    4;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              |||||||||||:||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGASVELLSFLPSDFFPSIRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              |||||| |||||| |||||||||:||||||| ||||| ||||||||||||||||:||||
Db         61 CWGELMNLATWVGSNLEDPASRELVVSYVNVNMGLKIRQLLWFHISCLTFGRETVLEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 9
CORA_HPBV9
ID   CORA_HPBV9     STANDARD;      PRT;   214 AA.
AC   P17099;
DT   01-AUG-1990 (Rel. 15, Created)
DT   01-AUG-1990 (Rel. 15, Last sequence update)
DT   01-AUG-1992 (Rel. 23, Last annotation update)
DE   Core antigen.
GN   C.
OS   Hepatitis B virus (subtype adw / strain 991).
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10410;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Koechel H.G., Schueler A., Lottmann S., Thomssen R.;
RL   Submitted (FEB-1990) to the EMBL/GenBank/DDBJ databases.
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CC   ----------------------------------------------------------------------
DR   EMBL; X51970; CAA36232.1; -.
DR   PIR; S10381; NKVLKS.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
KW   Core protein; Repeat.
FT   REPEAT       193    200
FT   REPEAT       201    208
SQ   SEQUENCE   214 AA;  24722 MW;  2D668333EC5AFB8C CRC64;

  Query Match             95.3%;  Score 756;  DB 1;  Length 214;
  Best Local Similarity   96.0%;  Pred. No. 1.1e-68;
  Matches  143;  Conservative    2;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
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                ||||||||||||| |||||||||||:||||||||| |||||| || |||||||||:||||
Db         90 CWGELMTLATWVGNNLEDPASRDLVVNYVNTNMGLKIRQLLWFRISYLTFGRETVLEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        150 SFGVWIRTPPAYRPPNAPILSTLPETTVV 178


RESULT 10
CORA_HPBVL
ID   CORA_HPBVL     STANDARD;      PRT;   183 AA.
AC   P12901;
DT   01-OCT-1989 (Rel. 12, Created)
DT   01-OCT-1989 (Rel. 12, Last sequence update)
DT   10-OCT-2003 (Rel. 42, Last annotation update)
DE   Core antigen.
GN   C.
OS   Hepatitis B virus (strain lsh / chimpanzee isolate).
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10414;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=88258473; PubMed=2838576;
RA   Vaudin M., Wolstenholme A.J., Tsiquaye K.N., Zuckerman A.J.,
RA   Harrison T.J.;
RT   "The complete nucleotide sequence of the genome of a hepatitis B
RT   virus isolated from a naturally infected chimpanzee.";
RL   J. Gen. Virol. 69:1383-1389(1988).
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CC   ---------------------------------------------------------------------
DR   EMBL; D00220; BAA00157.1; -.
DR   PIR; A28885; NKVLCP.
DR   PDB; 1HHH; 31-OCT-93.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
KW   Core protein; Repeat; 3D-structure.
FT   REPEAT      162    169
FT   REPEAT      170    177
SQ   SEQUENCE   183 AA;  20999 MW;  923DCB94A33FC0E8 CRC64;

  Query Match            95.1%;  Score 754;  DB 1;  Length 183;
  Best Local Similarity   94.6%;  Pred. No. 1.5e-68;
  Matches  141;  Conservative    5;  Mismatches    3;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              |||||||||||||||||||||||||||||||||||||||||||||||||||:|||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPNHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              |||||||||:||| |||||||| ||:||||||||| |||||||||||||||||:||||
Db         61 CWGELMTLASWVGNNLEDPASREQVVNYVNTNMGLKIRQLLWFHISCLTFGRETVLEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 11
CORA_HPBVT
ID   CORA_HPBVT     STANDARD;      PRT;   212 AA.
AC   Q05495;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1995 (Rel. 32, Last annotation update)
DE   Core antigen.
GN   C.
OS   Hepatitis B virus (subtype adw4 / strain Brazil / isolate w4B).
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=45410;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=93346970; PubMed=8345355;
RA   Naumann H., Schaefer S., Yoshida C.F.T., Gaspar A.M.C., Repp R.,
RA   Gerlich W.H.;
RT   "Identification of a new hepatitis B virus (HBV) genotype from Brazil
RT   that expresses HBV surface antigen subtype adw4.";
RL   J. Gen. Virol. 74:1627-1632(1993).
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CC   ---------------------------------------------------------------------
DR   EMBL; X69798; CAA49452.1; -.
DR   PIR; JQ2227; JQ2227.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
KW   Core protein; Repeat.
FT   DOMAIN      178    204       ARG-RICH.
FT   DOMAIN      184    203       3 X 5 AA REPEATS OF S-P-R-R-R.
FT   REPEAT      184    188       1.
FT   REPEAT      191    195       2.
FT   REPEAT      199    203       3.
SQ   SEQUENCE   212 AA;  24234 MW;  F832610DB7C36FD2 CRC64;

  Query Match            94.7%;  Score 751;  DB 1;  Length 212;
  Best Local Similarity   93.3%;  Pred. No. 3.5e-68;
  Matches  139;  Conservative    8;  Mismatches    2;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              |||||||||||:|||||||||||||||||||||||||||||:||||||||:|:|||||||||
Db         30 MDIDPYKEFGASVELLSFLPSDFFPSVRDLLDTASALYRDALESPEHCTPNHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              |||||||||:||| |||||||:|||||:||||||||| |||||||||||||||||:||||
Db         90 CWGELMTLASWVGNNLEDPAARDLVVNYVNTNMGLKIRQLLWFHISCLTFGRETVLEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        150 SFGVWIRTPPAYRPPNAPILSTLPETTVV 178


RESULT 12
CORA_HPBVF
ID   CORA_HPBVF     STANDARD;      PRT;   195 AA.
AC   P29178;
DT   01-DEC-1992 (Rel. 24, Created)
DT   01-DEC-1992 (Rel. 24, Last sequence update)
DT   01-DEC-1992 (Rel. 24, Last annotation update)
DE   Core antigen.
GN   C.
OS   Hepatitis B virus (subtype adw2 variant sf).
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=31515;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=90169850; PubMed=2307406;
RA   Bhat R.A., Ulrich P.P., Vyas G.N.;
RT   "Molecular characterization of a new variant of hepatitis B virus in
RT   a persistently infected homosexual man.";
RL   Hepatology 11:271-276(1990).
DR   PIR; A37182; NKVLH3.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
KW   Core protein; Repeat.
FT   REPEAT      174    181
```

```
FT   REPEAT       182    189
SQ   SEQUENCE   195 AA;  22461 MW;  E2B166F879CB7CB7 CRC64;

  Query Match             94.5%;  Score 749;  DB 1;  Length 195;
  Best Local Similarity   94.0%;  Pred. No. 5e-68;
  Matches  140;  Conservative    5;  Mismatches    4;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              :|||||||||||||||||||||||||||||||||||||||||||:||| :|||||||||||||
Db         13 LDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYRESLESSDHCSPHHTALRQAIL 72

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              || |||||||||| ||||||||||:||||||||| ||||||||||||||||:||||
Db         73 CWVELMTLATWVGNNLEDPASRDLVVNYVNTNMGLKIRQLLWFHISCLTFGRETVLEYLV 132

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        133 SFGVWIRTPPAYRPPNAPILSTLPETTVV 161


RESULT 13
CORA_WHV1
ID   CORA_WHV1      STANDARD;      PRT;   188 AA.
AC   P03152;
DT   21-JUL-1986 (Rel. 01, Created)
DT   21-JUL-1986 (Rel. 01, Last sequence update)
DT   15-DEC-1998 (Rel. 37, Last annotation update)
DE   Core antigen.
GN   C.
OS   Woodchuck hepatitis virus 1 (WHV 1),
OS   Woodchuck hepatitis virus 7 (WHV 7),
OS   Woodchuck hepatitis virus 59 (WHV 59), and
OS   Woodchuck hepatitis virus 8 (infectious clone) (WHV 8).
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10430, 10432, 10431, 10434;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   SPECIES=Woodchuck hepatitis virus 1;
RX   MEDLINE=82216969; PubMed=7086958;
RA   Galibert F., Chen T.N., Mandart E.;
RT   "Nucleotide sequence of a cloned woodchuck hepatitis virus genome:
RT   comparison with the hepatitis B virus sequence.";
RL   J. Virol. 41:51-65(1982).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   SPECIES=Woodchuck hepatitis virus 7, and Woodchuck hepatitis virus 59;
RX   MEDLINE=88101359; PubMed=3336938;
RA   Cohen J.I., Miller R.H., Rosenblum B., Denniston K., Gerin J.L.,
RA   Purcell R.H.;
RT   "Sequence comparison of woodchuck hepatitis virus replicative forms
RT   shows conservation of the genome.";
RL   Virology 162:12-20(1988).
RN   [3]
RP   SEQUENCE FROM N.A.
RC   SPECIES=Woodchuck hepatitis virus 8 (infectious clone);
RX   MEDLINE=89184524; PubMed=2928306;
RA   Girones R., Cote P.J., Hornbuckle W.E., Tennant B.C., Gerin J.L.,
RA   Purcell R.H., Miller R.H.;
RT   "Complete nucleotide sequence of a molecular clone of woodchuck
RT   hepatitis virus that is infectious in the natural host.";
RL   Proc. Natl. Acad. Sci. U.S.A. 86:1846-1849(1989).
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; J02442; AAA46761.1; -.
DR   EMBL; M18752; AAA46769.1; -.
DR   EMBL; M19183; AAA46765.1; -.
DR   EMBL; J04514; AAA46772.1; -.
DR   PIR; C32397; NKVLC.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
KW   Core protein; Repeat.
FT   REPEAT       167    174
FT   REPEAT       175    182
SQ   SEQUENCE   188 AA;  21693 MW;  1F4454D0A7B7CE42 CRC64;

  Query Match             67.8%;  Score 538;  DB 1;  Length 188;
  Best Local Similarity   64.4%;  Pred. No. 7.2e-47;
  Matches   96;  Conservative   20;  Mismatches   33;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||:: :||:||| |||| :  |:|||:||| | |   ||||||||||:|||::
Db          1 MDIDPYKEFGSSYQLLNFLPLDFFPDLNALVDTATALYEEELTGREHCSPHHTAIRQALV 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              || ||  |  |:  |:     | ::|::||   ||| || ||||:||||||: || |:||
Db         61 CWDELTKLIAWMSSNITSEQVRTIIVNHVNDTWGLKVRQSLWFHLSCLTFGQHTVQEFLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||  ||||||||||||||| ||:
Db        121 SFGVWIRTPAPYRPPNAPILSTLPEHTVI 149


RESULT 14
CORA_HPBGS
ID   CORA_HPBGS     STANDARD;      PRT;   217 AA.
AC   P03153;
DT   21-JUL-1986 (Rel. 01, Created)
DT   21-JUL-1986 (Rel. 01, Last sequence update)
DT   01-JAN-1990 (Rel. 13, Last annotation update)
DE   Core antigen.
GN   C.
OS   Ground squirrel hepatitis virus (GSHV).
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10406;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=84267998; PubMed=6086950;
RA   Seeger C., Ganem D., Varmus H.E.;
RT   "Nucleotide sequence of an infectious molecularly cloned genome of
RT   ground squirrel hepatitis virus.";
RL   J. Virol. 51:367-375(1984).
CC   ---------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; K02715; AAA46755.1; -.
DR   PIR; A03715; NKVLS.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
KW   Core protein; Repeat.
FT   REPEAT       196    203
FT   REPEAT       204    211
SQ   SEQUENCE   217 AA;  25189 MW;  DF489467355EC11A CRC64;

  Query Match             67.4%;  Score 534.5;  DB 1;  Length 217;
  Best Local Similarity   65.1%;  Pred. No. 1.9e-46;
  Matches   97;  Conservative   19;  Mismatches   32;  Indels    1;  Gaps    1;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||:: :||:||| |||| :  |:|||:||| | |   ||||||||||:|||::
Db         31 MDIDPYKEFGSSYQLLNFLPLDFFPDLNALVDTAAALYEEELTGREHCSPHHTAIRQALV 90

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              || ||  | ||:  |  :   | ::| :||   ||| || ||||:||||||: || |:||
```

```
Db         91 CWEELTRLITWMSENTTEEVRR-IIVDHVNNTWGLKVRQTLWFHLSCLTFGQHTVQEFLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              ||||||||| ||||||||||||| ||:
Db        150 SFGVWIRTPAPYRPPNAPILSTLPEHTVI 178


RESULT 15
CORA_WHV8
ID   CORA_WHV8      STANDARD;      PRT;   187 AA.
AC   P06433;
DT   01-JAN-1988 (Rel. 06, Created)
DT   01-JAN-1988 (Rel. 06, Last sequence update)
DT   01-OCT-1989 (Rel. 12, Last annotation update)
DE   Core antigen.
GN   C.
OS   Woodchuck hepatitis virus 8 (WHV 8).
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10433;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=86062931; PubMed=3855246;
RA   Kodama K., Ogasawara N., Yoshikawa H., Murakami S.;
RT   "Nucleotide sequence of a cloned woodchuck hepatitis virus genome:
RT   evolutional relationship between hepadnaviruses.";
RL   J. Virol. 56:978-986(1985).
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; M11082; AAA19185.1; -.
DR   PIR; A03714; NKVLC2.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
KW   Core protein; Repeat.
FT   REPEAT      166    173
FT   REPEAT      174    181
SQ   SEQUENCE   187 AA;  21579 MW;  D4BC446FF7163165 CRC64;

  Query Match             66.7%;  Score 529;  DB 1;  Length 187;
  Best Local Similarity   63.8%;  Pred. No. 5.7e-46;
  Matches   95;  Conservative   20;  Mismatches   34;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||:: :||:||| |||| :  |:|||:||| | |   |||||||||:|||::
Db          1 MDIDPYKEFGSSYQLLNFLPLDFFPDLNALVDTATALYEEELTGREHCSPHHTAIRQALV 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              || ||  |  |:  |:     | ::|::||   ||| || |||||:|||||: || |:||
Db         61 CWDELTKLIAWMSSNITSEQVRTIIVNHVNDTWGLKVRQSLWFHLSCLTFGQHTVQEFLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              || ||||||  |||||||||||||| ||:
Db        121 SFVVWIRTPAPYRPPNAPILSTLPEHTVI 149


Search completed: April 23, 2004, 16:28:46
Job time : 19 secs
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GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: April 23, 2004, 16:25:39 ; Search time 39 Seconds
(without alignments)
1205.441 Million cell updates/sec

Title: US-09-931-325C-170_COPY_1_149
Perfect score: 793
Sequence: 1 MDIDPYKEFGATVELLSFLP.....PAYRPPNAPILSTLPETTVV 149

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1017041 seqs, 315518202 residues

Total number of hits satisfying chosen parameters: 1017041

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SPTREMBL_25:*
1: sp_archea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:*
12: sp_virus:*
13: sp_vertebrate:*
14: sp_unclassified:*
15: sp_rvirus:*
16: sp_bacteriap:*
17: sp_archeap:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	793	100.0	176	12	Q9QRQ5	Q9qrq5 hepatitis b
2	793	100.0	205	12	Q9QRQ6	Q9qrq6 hepatitis b
3	793	100.0	212	12	Q917J7	Q917j7 hepatitis b
4	793	100.0	212	12	O11884	O11884 hepatitis b
5	793	100.0	212	12	Q89656	Q89656 hepatitis b
6	791	99.7	164	12	Q67904	Q67904 hepatitis b
7	790	99.6	183	12	Q8VBF8	Q8vbf8 hepatitis b
8	790	99.6	183	12	Q89437	Q89437 hepatitis b
9	790	99.6	183	12	Q68008	Q68008 hepatitis b
10	790	99.6	183	12	Q805R2	Q805r2 hepatitis b
11	790	99.6	212	12	Q917J5	Q917j5 hepatitis b
12	790	99.6	212	12	Q67876	Q67876 hepatitis b
13	790	99.6	212	12	Q68020	Q68020 hepatitis b
14	790	99.6	212	12	Q68012	Q68012 hepatitis b
15	790	99.6	212	12	Q89597	Q89597 hepatitis b
16	788	99.4	212	12	Q68025	Q68025 hepatitis b
17	788	99.4	212	12	Q68068	Q68068 hepatitis b
18	788	99.4	212	12	Q68075	Q68075 hepatitis b
19	787	99.2	183	12	Q68066	Q68066 hepatitis b
20	787	99.2	212	12	Q68070	Q68070 hepatitis b
21	787	99.2	212	12	Q67984	Q67984 hepatitis b
22	787	99.2	212	12	Q917J2	Q917j2 hepatitis b
23	787	99.2	212	12	Q68032	Q68032 hepatitis b
24	787	99.2	212	12	Q80SD7	Q80sd7 hepatitis b
25	786	99.1	183	12	Q67989	Q67989 hepatitis b
26	786	99.1	212	12	Q917J4	Q917j4 hepatitis b
27	785	99.0	183	12	Q89531	Q89531 hepatitis b
28	785	99.0	212	12	Q91SY7	Q91sy7 hepatitis b
29	785	99.0	212	12	Q91SZ5	Q91sz5 hepatitis b
30	785	99.0	212	12	Q91SY6	Q91sy6 hepatitis b
31	785	99.0	212	12	Q91SZ2	Q91sz2 hepatitis b
32	785	99.0	212	12	Q91SY2	Q91sy2 hepatitis b
33	785	99.0	212	12	Q917I7	Q917i7 hepatitis b
34	785	99.0	212	12	Q91SX7	Q91sx7 hepatitis b
35	785	99.0	212	12	Q91SX9	Q91sx9 hepatitis b
36	785	99.0	212	12	Q910K2	Q910k2 hepatitis b
37	785	99.0	212	12	Q91SY0	Q91sy0 hepatitis b
38	785	99.0	212	12	Q9QAW9	Q9qaw9 hepatitis b
39	784	98.9	183	12	Q910W2	Q910w2 hepatitis b
40	784	98.9	183	12	Q8VBF6	Q8vbf6 hepatitis b
41	784	98.9	183	12	Q68048	Q68048 hepatitis b
42	784	98.9	212	12	Q67872	Q67872 hepatitis b
43	784	98.9	212	12	Q67912	Q67912 hepatitis b
44	784	98.9	212	12	Q68051	Q68051 hepatitis b
45	784	98.9	214	12	Q91T08	Q91t08 hepatitis b

ALIGNMENTS

RESULT 1
Q9QRQ5
ID Q9QRQ5 PRELIMINARY; PRT; 176 AA.
AC Q9QRQ5;
DT 01-MAY-2000 (TrEMBLrel. 13, Created)
DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT 01-OCT-2002 (TrEMBLrel. 22, Last annotation update)
DE Core protein (Fragment).
GN C.
OS Hepatitis B virus.
OC Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX NCBI_TaxID=10407;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=Mut 50;
RA Saxena A., Acharya S.K., Nayak B., Panda S.K.;
RT "HBV mutants in non-A to E acute liver failure patients in India.";
RL Submitted (DEC-1998) to the EMBL/GenBank/DDBJ databases.
DR EMBL; AF115425; AAD49194.1; -.
DR InterPro; IPR002006; Hepatitis_core.
DR Pfam; PF00906; Hepatitis_core; 1.
FT NON_TER 176 176
SQ SEQUENCE 176 AA; 20297 MW; 28E97ABF657D93F4 CRC64;

Query Match 100.0%; Score 793; DB 12; Length 176;
Best Local Similarity 100.0%; Pred. No. 1.5e-80;
Matches 149; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
```

```
RESULT 2
Q9QRQ6
ID   Q9QRQ6      PRELIMINARY;      PRT;   205 AA.
AC   Q9QRQ6;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-OCT-2002 (TrEMBLrel. 22, Last annotation update)
DE   Precore/core protein (Fragment).
GN   C.
OS   Hepatitis B virus.
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10407;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=Mut 50;
RA   Saxena A., Acharya S.K., Nayak B., Panda S.K.;
RT   "HBV mutants in non-A to E acute liver failure patients in India.";
RL   Submitted (DEC-1998) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF115425; AAD49193.1; -.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
FT   NON_TER     205    205
SQ   SEQUENCE   205 AA;  23531 MW;  A8CF2117AC9938E6 CRC64;

  Query Match             100.0%;  Score 793;  DB 12;  Length 205;
  Best Local Similarity   100.0%;  Pred. No. 1.8e-80;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        150 SFGVWIRTPPAYRPPNAPILSTLPETTVV 178


RESULT 3
Q917J7
ID   Q917J7      PRELIMINARY;      PRT;   212 AA.
AC   Q917J7;
DT   01-DEC-2001 (TrEMBLrel. 19, Created)
DT   01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
DT   01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE   Pre-core protein.
OS   Hepatitis B virus.
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10407;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=I19-Fam E;
RA   Zampino R., Lobello S., Chiaramonte M., Venturi-Pasini C., Dumpis U.,
RA   Thursz M., Karayiannis P.;
RT   "Intra-familial transmission of Hepatitis B virus in Italy:
RT   Phylogenetic sequence analysis and amino acid variation of the core
RT   gene.";
RL   J. Hepatol. 0:0-0(2002).
DR   EMBL; AF419515; AAL15943.1; -.
DR   PIR; S33686; S33686.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
FT   CHAIN        30    212       CORE PROTEIN.
SQ   SEQUENCE   212 AA;  24377 MW;  B9C16A527905A5F8 CRC64;

  Query Match             100.0%;  Score 793;  DB 12;  Length 212;
  Best Local Similarity   100.0%;  Pred. No. 1.9e-80;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        150 SFGVWIRTPPAYRPPNAPILSTLPETTVV 178


RESULT 4
O11884
ID   O11884      PRELIMINARY;      PRT;   212 AA.
AC   O11884;
DT   01-JUL-1997 (TrEMBLrel. 04, Created)
DT   01-JUL-1997 (TrEMBLrel. 04, Last sequence update)
DT   01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE   Core antigen (Core and e antigens).
GN   C.
OS   Hepatitis B virus.
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10407;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Rao B.S., Casey J.L., Rinaudo J.S., Korba B.E.;
RT   "Complete nucleotide sequence of a molecular clone of hepatitis B
RT   virus from the 2.2.15 cell line.";
RL   Submitted (MAR-1997) to the EMBL/GenBank/DDBJ databases.
RN   [2]
RP   SEQUENCE FROM N.A.
RC   STRAIN=CH2-OHf;
RA   Duong T.N., Michitaka K., Chen Y., Horiike N., Kawai K., Onji M.;
RT   "A comparison of genotype C and D hepatitis B virus: a clinical and
RT   molecular biological study.";
RL   Submitted (AUG-2002) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; U95551; AAB59971.1; -.
DR   EMBL; AB090269; BAC57440.1; -.
DR   PIR; C94409; NKVLA3.
DR   PIR; S33686; S33686.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
SQ   SEQUENCE   212 AA;  24360 MW;  D301689E8B05A1B8 CRC64;

  Query Match             100.0%;  Score 793;  DB 12;  Length 212;
  Best Local Similarity   100.0%;  Pred. No. 1.9e-80;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        150 SFGVWIRTPPAYRPPNAPILSTLPETTVV 178


RESULT 5
Q89656
ID   Q89656      PRELIMINARY;      PRT;   212 AA.
AC   Q89656;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE   Core antigen (Precore protein) (Core and e antigen).
GN   PREC OR C.
```

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OS   Hepatitis B virus.
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10407;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Lai M.E., Mazzoleni A.P., Porru A., Balestrieri A.;
RL   Submitted (MAR-1995) to the EMBL/GenBank/DDBJ databases.
RN   [2]
RP   SEQUENCE FROM N.A.
RC   STRAIN=AYW4;
RA   Pluciennicczak A.;
RL   Submitted (AUG-1994) to the EMBL/GenBank/DDBJ databases.
RN   [3]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=81012091; PubMed=399327;
RA   Galibert F., Mandart E., Fitoussi F., Tiollais P., Charnay P.;
RT   "Nucleotide sequence of the hepatitis B virus genome (subtype ayw)
RT   cloned in E. coli.";
RL   Nature 281:646-650(1979).
RN   [4]
RP   SEQUENCE FROM N.A.
RA   Borisova G.P., Pumpen P.P., Bychko V.V., Pushko P.M., Kalis Y.V.,
RA   Dishler A.V., Gren E.Y., Tsibinogin V.V., Kukain R.A.;
RL   Dokl. Biochem. 279:386-390(1985).
RN   [5]
RP   SEQUENCE FROM N.A.
RC   STRAIN=1;
RA   Petzold D.R., Tautz B., Wolf F., Drescher J.;
RT   "Infection chains and evolution rates of Hepatitis B Virus in cardiac
RT   transplant recipients infected nosocommially.";
RL   J. Med. Virol. 0:0-0(1999).
RN   [6]
RP   SEQUENCE FROM N.A.
RC   STRAIN=1;
RA   Petzold D.R.;
RL   Submitted (JAN-1999) to the EMBL/GenBank/DDBJ databases.
RN   [7]
RP   SEQUENCE FROM N.A.
RA   Kay A.C.;
RL   Submitted (AUG-2001) to the EMBL/GenBank/DDBJ databases.
RN   [8]
RP   SEQUENCE FROM N.A.
RA   Jeantet D., Chemin I., Mandrand B., Zoulim F., Trepo C., Kay A.;
RT   "Characterization of two Hepatitis B virus populations isolated from a
RT   Hepatitis B surface antigen-negative patient.";
RL   Hepatology 0:0-0(0).
RN   [9]
RP   SEQUENCE FROM N.A.
RC   STRAIN=b-dono12;
RA   Duong T.N., Michitaka K., Chen Y., Horiike N., Kawai K., Onji M.;
RT   "A comparison of genotype C and D hepatitis B virus: a clinical and
RT   molecular biological study.";
RL   Submitted (AUG-2002) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; X85290; CAA59609.1; -.
DR   EMBL; X85300; CAA59631.1; -.
DR   EMBL; X85313; CAA59659.1; -.
DR   EMBL; X85283; CAA59593.1; -.
DR   EMBL; X85306; CAA59644.1; -.
DR   EMBL; Z35716; CAA84786.1; -.
DR   EMBL; X85312; CAA59657.1; -.
DR   EMBL; AJ131956; CAA10538.1; -.
DR   EMBL; AJ344117; CAC87011.1; -.
DR   EMBL; AB090270; BAC57444.1; -.
DR   PIR; C94409; NKVLA3.
DR   PIR; S33686; S33686.
DR   PIR; S47405; NKVLAH.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
SQ   SEQUENCE   212 AA;  24350 MW;  D3016A4E8B05A1B8 CRC64;

  Query Match           100.0%;  Score 793;  DB 12;  Length 212;
  Best Local Similarity  100.0%;  Pred. No. 1.9e-80;
  Matches  149;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        150 SFGVWIRTPPAYRPPNAPILSTLPETTVV 178


RESULT 6
Q67904
ID   Q67904      PRELIMINARY;      PRT;   164 AA.
AC   Q67904;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE   Nucleocapsid protein (Fragment).
GN   HBCAG.
OS   Hepatitis B virus.
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10407;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=case 8;
RX   MEDLINE=95294561; PubMed=7775955;
RA   Valliammai T., Thyagarajan S.P., Zuckerman A.J., Harrison T.J.;
RT   "Precore and core mutations in HBV from individuals in India with
RT   chronic infection.";
RL   J. Med. Virol. 45:321-325(1995).
DR   EMBL; Z68142; CAA92251.1; -.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
FT   NON_TER     164    164
SQ   SEQUENCE   164 AA;  18717 MW;  BAE84DDEE5B8DF11 CRC64;

  Query Match           99.7%;  Score 791;  DB 12;  Length 164;
  Best Local Similarity  99.3%;  Pred. No. 2.3e-80;
  Matches  148;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||:||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVLEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 7
Q8VBF8
ID   Q8VBF8      PRELIMINARY;      PRT;   183 AA.
AC   Q8VBF8;
DT   01-MAR-2002 (TrEMBLrel. 20, Created)
DT   01-MAR-2002 (TrEMBLrel. 20, Last sequence update)
DT   01-OCT-2002 (TrEMBLrel. 22, Last annotation update)
DE   Core protein.
OS   Hepatitis B virus.
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10407;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=I54;
RA   Jazayeri M., Sran N., Gish R., Basuni A.A., Cooksley G., Locarnini S.,
RA   Carman W.F.;
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RT   "HBV core sequence:definition of genotype-specific variability and
RT   correlation with geographic origin.";
RL   Submitted (NOV-2000) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF324140; AAL31853.1; -.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
SQ   SEQUENCE   183 AA;  21100 MW;  62D9CA5700042559 CRC64;

  Query Match             99.6%;  Score 790;  DB 12;  Length 183;
  Best Local Similarity   99.3%;  Pred. No. 3.4e-80;
  Matches  148;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||:||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTAAALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 8
Q89437
ID   Q89437      PRELIMINARY;      PRT;   183 AA.
AC   Q89437;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-OCT-2002 (TrEMBLrel. 22, Last annotation update)
DE   Core protein (X, PREC and C genes) (CASTAA 2).
GN   CORE.
OS   Hepatitis B virus, and
OS   Hepatitis B virus (subtype ayw).
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10407, 10418;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   SPECIES=Hepatitis B virus; STRAIN=I59;
RA   Jazayeri M., Sran N., Gish R., Basuni A.A., Cooksley G., Locarnini S.,
RA   Carman W.F.;
RT   "HBV core sequence:definition of genotype-specific variability and
RT   correlation with geographic origin.";
RL   Submitted (NOV-2000) to the EMBL/GenBank/DDBJ databases.
RN   [2]
RP   SEQUENCE FROM N.A.
RC   SPECIES=Hepatitis B virus (subtype ayw);
RA   Lai M.E., Mazzoleni A.P., Porru A., Balestrieri A.;
RL   Submitted (MAR-1995) to the EMBL/GenBank/DDBJ databases.
RN   [3]
RP   SEQUENCE FROM N.A.
RC   SPECIES=Hepatitis B virus (subtype ayw);
RA   Karayiannis P.;
RL   Submitted (DEC-1995) to the EMBL/GenBank/DDBJ databases.
RN   [4]
RP   SEQUENCE FROM N.A.
RC   SPECIES=Hepatitis B virus (subtype ayw);
RA   Karayiannis P.;
RL   Submitted (SEP-1995) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF324146; AAL31859.1; -.
DR   EMBL; X85289; CAA59607.1; -.
DR   EMBL; X80925; CAA56888.1; -.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
SQ   SEQUENCE   183 AA;  21102 MW;  2BB902063F253228 CRC64;

  Query Match             99.6%;  Score 790;  DB 12;  Length 183;
  Best Local Similarity   99.3%;  Pred. No. 3.4e-80;
  Matches  148;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||:||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYRDALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 9
Q68008
ID   Q68008      PRELIMINARY;      PRT;   183 AA.
AC   Q68008;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-OCT-2002 (TrEMBLrel. 22, Last annotation update)
DE   Core protein.
GN   CORE.
OS   Hepatitis B virus.
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10407;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Lai M.E., Mazzoleni A.P., Porru A., Balestrieri A.;
RL   Submitted (MAR-1995) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; X85284; CAA59596.1; -.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
SQ   SEQUENCE   183 AA;  21102 MW;  50D8D9763F25E958 CRC64;

  Query Match             99.6%;  Score 790;  DB 12;  Length 183;
  Best Local Similarity   99.3%;  Pred. No. 3.4e-80;
  Matches  148;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              |||:||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGDLMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 10
Q805R2
ID   Q805R2      PRELIMINARY;      PRT;   183 AA.
AC   Q805R2;
DT   01-JUN-2003 (TrEMBLrel. 24, Created)
DT   01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
DT   01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE   Core protein.
OS   Hepatitis B virus.
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10407;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=FH1-YS, AH1-SY, and IS1-OY;
RX   MEDLINE=22368625; PubMed=12480564;
RA   Chen Y., Michitaka K., Matsubara H., Yamamoto K., Horiike N., Onji M.;
RT   "Complete genome sequence of hepatitis B virus (HBV) from a patient
RT   with fulminant hepatitis without precore and core promoter mutations:
RT   comparison with HBV from a patient with acute hepatitis infected from
RT   the same infectious source.";
RL   J. Hepatol. 38:84-90(2003).
DR   EMBL; AB078031; BAC54833.1; -.
DR   EMBL; AB078032; BAC54836.1; -.
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DR   EMBL; AB078033; BAC54839.1; -.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
SQ   SEQUENCE   183 AA;  21130 MW;  1B39CDC97BDA0319 CRC64;

  Query Match             99.6%;  Score 790;  DB 12;  Length 183;
  Best Local Similarity   99.3%;  Pred. No. 3.4e-80;
  Matches  148;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||:|||||||||||||||||||||||||||||||||||
Db          1 MDIDPYKEFGATVELLSFLPSDFFPSLRDLLDTASALYREALESPEHCSPHHTALRQAIL 60

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||||||||||||||||
Db        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149


RESULT 11
Q917J5
ID   Q917J5      PRELIMINARY;      PRT;   212 AA.
AC   Q917J5;
DT   01-DEC-2001 (TrEMBLrel. 19, Created)
DT   01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
DT   01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE   Pre-core protein.
OS   Hepatitis B virus.
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10407;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=I21-Fam E;
RA   Zampino R., Lobello S., Chiaramonte M., Venturi-Pasini C., Dumpis U.,
RA   Thursz M., Karayiannis P.;
RT   "Intra-familial transmission of Hepatitis B virus in Italy:
RT   Phylogenetic sequence analysis and amino acid variation of the core
RT   gene.";
RL   J. Hepatol. 0:0-0(2002).
DR   EMBL; AF419517; AAL15945.1; -.
DR   PIR; S33686; S33686.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
FT   CHAIN        30    212       CORE PROTEIN.
SQ   SEQUENCE   212 AA;  24412 MW;  19DE8A4E8B05B24E CRC64;

  Query Match             99.6%;  Score 790;  DB 12;  Length 212;
  Best Local Similarity   99.3%;  Pred. No. 4.1e-80;
  Matches  148;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||||||:|||||||||||||
Db        150 SFGVWIRTPPAYRPPNSPILSTLPETTVV 178


RESULT 12
Q67876
ID   Q67876      PRELIMINARY;      PRT;   212 AA.
AC   Q67876;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE   Pre C/C ORF.
OS   Hepatitis B virus.
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10407;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Lai M.E., Mazzoleni A.P., Balestrieri A., Melis A., Porru A.;
RT   "Sequence analysis of HBV genomes isolated from patients with HBsAg
RT   negative chronic liver disease.";
RL   Submitted (MAR-1992) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; X65258; CAA46354.1; -.
DR   PIR; C94409; NKVLA3.
DR   PIR; S20750; S20750.
DR   PIR; S33686; S33686.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
SQ   SEQUENCE   212 AA;  24348 MW;  6E91CC7D068EB573 CRC64;

  Query Match             99.6%;  Score 790;  DB 12;  Length 212;
  Best Local Similarity   99.3%;  Pred. No. 4.1e-80;
  Matches  148;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              :|||||||||||||||||||||||||||||
Db        150 AFGVWIRTPPAYRPPNAPILSTLPETTVV 178


RESULT 13
Q68020
ID   Q68020      PRELIMINARY;      PRT;   212 AA.
AC   Q68020;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE   Pre-c/core protein.
GN   PRE-C/CORE.
OS   Hepatitis B virus.
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10407;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Lai M.E., Mazzoleni A.P., Porru A., Balestrieri A.;
RL   Submitted (MAR-1995) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; X85291; CAA59611.1; -.
DR   PIR; C94409; NKVLA3.
DR   PIR; S33686; S33686.
DR   PIR; S53211; S53211.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
SQ   SEQUENCE   212 AA;  24336 MW;  63006A4E8B04A1B8 CRC64;

  Query Match             99.6%;  Score 790;  DB 12;  Length 212;
  Best Local Similarity   99.3%;  Pred. No. 4.1e-80;
  Matches  148;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              |||:||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 CWGDLMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              ||||||||||||||||||||||||||||||
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Db        150 SFGVWIRTPPAYRPPNAPILSTLPETTVV 178


RESULT 14
Q68012
ID   Q68012      PRELIMINARY;      PRT;   212 AA.
AC   Q68012;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE   Pre-c/core protein.
GN   PRE-C/CORE.
OS   Hepatitis B virus.
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10407;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Lai M.E., Mazzoleni A.P., Porru A., Balestrieri A.;
RL   Submitted (MAR-1995) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; X85286; CAA59600.1; -.
DR   PIR; S33686; S33686.
DR   PIR; S53200; S53200.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
SQ   SEQUENCE   212 AA;  24250 MW;  D30179D05DCD51B8 CRC64;

  Query Match             99.6%;  Score 790;  DB 12;  Length 212;
  Best Local Similarity   99.3%;  Pred. No. 4.1e-80;
  Matches  148;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              |||||||||||:||||||||||||||||
Db        150 SFGVWIRTPPAYKPPNAPILSTLPETTVV 178


RESULT 15
Q89597
ID   Q89597      PRELIMINARY;      PRT;   212 AA.
AC   Q89597;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE   HBCAG (PRE-CORE protein) (PRECORE/core protein).
OS   Hepatitis B virus (subtype ayw), and
OS   Hepatitis B virus.
OC   Viruses; Retroid viruses; Hepadnaviridae; Orthohepadnavirus.
OX   NCBI_TaxID=10418, 10407;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   SPECIES=Hepatitis B virus (subtype ayw); STRAIN=SUB-TYPE AYW;
RX   MEDLINE=94079539; PubMed=8257295;
RA   Preisler-Adams S., Schlayer M.J., Peters T., Hettler F., Gerok W.,
RA   Rasenack J.;
RT   "Sequence analysis of hepatitis B virus DNA in immunologically
RT   negative infection.";
RL   Arch. Virol. 133:385-396(1993).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   SPECIES=Hepatitis B virus (subtype ayw); STRAIN=AYW;
RA   Karayiannis P.;
RL   Submitted (DEC-1995) to the EMBL/GenBank/DDBJ databases.
RN   [3]
RP   SEQUENCE FROM N.A.
RC   SPECIES=Hepatitis B virus (subtype ayw); STRAIN=AYW;
RA   Karayiannis P.;
RL   Submitted (SEP-1995) to the EMBL/GenBank/DDBJ databases.
RN   [4]
RP   SEQUENCE FROM N.A.
RC   SPECIES=Hepatitis B virus; STRAIN=I43-Fam G;
RA   Zampino R., Lobello S., Chiaramonte M., Venturi-Pasini C., Dumpis U.,
RA   Thursz M., Karayiannis P.;
RT   "Intra-familial transmission of Hepatitis B virus in Italy:
RT   Phylogenetic sequence analysis and amino acid variation of the core
RT   gene.";
RL   J. Hepatol. 0:0-0(2002).
RN   [5]
RP   SEQUENCE FROM N.A.
RC   SPECIES=Hepatitis B virus; STRAIN=Gam1119F29, and Gam1821F217;
RA   Dumpis U., Mendy M., Karayiannis P.;
RT   "Prevalence of HBV core promoter/precore/core mutations in Gambian
RT   chronic carriers.";
RL   Submitted (FEB-2001) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; X72702; CAA51257.1; -.
DR   EMBL; X80925; CAA56887.1; -.
DR   EMBL; AF419525; AAL15953.1; -.
DR   EMBL; AF350127; AAK57244.1; -.
DR   EMBL; AF350205; AAK57322.1; -.
DR   PIR; C94409; NKVLA3.
DR   PIR; S32204; S32204.
DR   PIR; S33686; S33686.
DR   InterPro; IPR002006; Hepatitis_core.
DR   Pfam; PF00906; Hepatitis_core; 1.
FT   CHAIN        30    212       CORE PROTEIN.
SQ   SEQUENCE   212 AA;  24336 MW;  1861B13E8B047AC8 CRC64;

  Query Match             99.6%;  Score 790;  DB 12;  Length 212;
  Best Local Similarity   99.3%;  Pred. No. 4.1e-80;
  Matches  148;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYREALESPEHCSPHHTALRQAIL 60
              |||||||||||||||||||||||||||||||||||||||||||:|||||||||||||||||||
Db         30 MDIDPYKEFGATVELLSFLPSDFFPSVRDLLDTASALYRDALESPEHCSPHHTALRQAIL 89

Qy         61 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 CWGELMTLATWVGVNLEDPASRDLVVSYVNTNMGLKFRQLLWFHISCLTFGRETVIEYLV 149

Qy        121 SFGVWIRTPPAYRPPNAPILSTLPETTVV 149
              ||||||||||||||||||||||||||||||
Db        150 SFGVWIRTPPAYRPPNAPILSTLPETTVV 178


Search completed: April 23, 2004, 16:29:38
Job time : 40 secs
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